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TWENTY-FIVE YEARS' EXPERIENCE IN TREATMENT AND MANAGEMENT OF PERNICIOUS ANEMIA

William P. Murphy, M.D., Boston

The story of pernicious anemia as it has evolved during the past century is both interesting and dramatic. As the various signs and symptoms have been added chapter by chapter, it has been possible to recognize the part that each would play as the story develops. During the past 25 years another chapter has been added that is now almost completed. The demonstration of the effectiveness of whole mammalian liver for the control of pernicious anemia was followed by the development of crude, then highly refined, extracts of liver for simplification of treatment, and, finally, by the recognition and isolation of the, or one of the, essential elements of liver. The final chapter has not been written, but it is, I hope, well started, for it is now possible to prevent pernicious anemia if its development is anticipated and the proper preventive therapy is instituted.

Limitation of space makes it impossible for me to present the story as completely as it should be presented. The following brief outline will serve to emphasize the fact that this story has been possible because of the cooperation of men trained in various branches of science, working in many countries throughout the world. Slightly over 100 years have elapsed since Thomas Addison,[1] in an address before the South Medical Society of London, described a severe form of anemia associated with a diseased condition of the adrenal capsules; it was not, however, until 1855, in a paper entitled "On the Constitutional and Local Effects of Disease of the Supra-Renal Capsules," that his classic description of the disease now commonly known as pernicious anemia appeared in print.[2] Although several authors had previously described single instances of anemia of a similar type, it was probably Addison's paper that gave impetus to a more intensive interest in what was then a rare form of anemia. During the next few years, several papers containing case reports appeared both in England and on the continent, some of which included data not previously recorded. Barclay[3] described for the first time soreness of the tongue. Fenwick[4] described the characteristic atrophy of the stomach and its imperfect secretion, which he believed to be the cause of the anemia. This important observation was later stressed by Hunter.[5] Eichhorst[6] described the presence of both large and small erythrocytes in blood viewed through a microscope, and Biermer,[7] in 1872, discussed the anemia that he observed in 15 patients and to which he referred as progressive pernicious anemia.

While the outstanding signs and symptoms were recognized and assembled to form the characteristic picture of pernicious anemia, the search for a satisfactory treatment was not as productive. Iron, arsenic, rest at resorts, transfusion, and a high-protein diet were all tried, with only transient success. Irrespective of the treatment used, the patients all died within a few months or years. The anemia continued to be truly pernicious. Clinical research that demonstrated the value of liver and, subsequently, its extracts for the control of pernicious anemia was begun in the spring of 1925.[8] Diets high in protein had shown some promise. In experiments with dogs made anemic by bleeding, Whipple and his associates[9] observed a more rapid production of hemoglobin in dogs that had ingested liver than occurred in those that had not. There were other evidences that liver would enhance cell maturation. It seemed desirable, in view of these facts, to study under carefully controlled conditions the effect of the ingestion of large amounts of liver on the

From the medical service of the Peter Bent Brigham Hospital.
Read before the First European Congress of Nobel Prize Winners, Lindau, Germany, June 12, 1951.

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4. Fenwick, S.: On Atrophy of the Stomach, Lancet **2**: 78 (July 16) 1870.
5. Hunter, W.: An Investigation into the Pathology of Pernicious Anemia, Lancet **2**: 555 (Sept. 22), **2**: 608 (Sept. 29), and **2**: 654 (Oct. 6) 1888.
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9. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia: Favorable Influence of Liver, Heart and Skeletal Muscle in Diet, Am. J. Physiol. **72**: 408-418 (May) 1925.

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anemia as well as on the other major manifestations of the disease in the patient with pernicious anemia. Since the various manifestations of the disease are well known, it is not necessary to describe them in detail; however, it may be helpful in following the later discussion to recall the three systems of the body that are involved:

1. *Blood-Forming Organs.* Anemia results from an arrest of maturation of the erythrocytes in the megaloblast stage due to the lack of a substance or substances present in the normal subject. The blood picture is that of macrocytic anemia, with a normal or increased cell content of hemoglobin. It is likely that in some instances the degree of anemia is enhanced during relapse by an increased rate of hemolysis of the erythrocytes.

2. *Gastrointestinal Tract.* The characteristic atrophy of the gastric mucosa that was mentioned previously is a congenital defect, probably present at birth, which results in abnormal gastric secretion. According to Castle's theory of the mechanism of normal blood formation,[10] a substance or substances contained in some foods (the extrinsic factor) react with normal gastric juice (the intrinsic factor) to form the anti-pernicious-anemia factor. Lacking either the extrinsic or intrinsic factor, pernicious anemia may develop. Atrophy of the papillae of the tongue, with soreness or burning, often referred to as glossitis, occurs frequently.

3. *Central Nervous System.* Destruction of nerve fibers in the posterior and lateral columns of the spinal cord, with replacement with glial tissue, occurs in many patients. This results in numbness, tingling or hyperesthesia of the extremities, and, finally, in difficulty of locomotion.

Successful treatment must eliminate the anemia, cure the glossitis, and control the difficulties resulting from central nervous system damage. The fundamental or congenital defect of atrophy of the gastric mucosa and the resultant abnormal gastric secretion cannot be reversed; consequently, treatment cannot cure the disease but should control it, if carried out properly throughout the remainder of the patient's life.

DEVELOPMENT OF LIVER EXTRACTS

The plan of treatment as originally carried out[11] required that each patient ingest daily 200 gm. of mammalian liver. Liver broiled lightly was usually supplied, although a few patients preferred to drink it raw as a finely ground pulp. Many of the patients treated during the early days of this research were severely anemic and critically ill, and some were practically comatose, so that the problems involved in carrying out the regimen were often difficult to surmount; however, after a few days' treatment, these patients showed striking improvement in their general well-being, with increased strength and appetite. At this stage, evidence of improvement could be demonstrated in the laboratory; the reticulocytes or young erythrocytes climbed steadily to their peak of production by the sixth to the eighth day, indicating a rapid rate of maturation of the erythrocytes. The icteric index of the blood serum returned to normal as the increased rate of cell destruction was controlled, and the hemoglobin and erythrocyte levels increased to normal during a period of a few weeks. The dietary intake was designed to supply, in addition to liver, a generous quantity of green and yellow vegetables, milk and eggs, and a sufficient amount of carbohydrates and fats to make up an adequate caloric intake. Usually no meat protein was supplied other than that in the liver, and the fat intake was limited. Because of the critical condition of some patients at the beginning of treatment, only the liver was ingested during the first few days.

As one patient after another continued to show a characteristic response to the ingested liver, it became evident that liver contained one or more substances necessary for the maturation of erythrocytes within the bone marrow. A simple water extract of liver made by myself was successfully used as a substitute for whole liver, demonstrating that the effective material was water soluble. The problem of extracting the effective material from the liver was taken over by Dr. Edwin J. Cohn and his associates[12] at Harvard Medical School. They soon produced an extract commonly referred to as fraction G, which has since formed the basis for most of the extracts that have been prepared commercially. As a water soluble powder for peroral use this extract was found to be useful as a substitute for liver, thus, in some respects, simplifying the problems of treatment; however, its relatively greater expense and disagreeable odor and taste, plus the fact that about 40% of the effective material in liver was lost during its production, frequently resulting in inadequate dosage, limited its value as a completely satisfactory substitute.

As the process of refinement proceeded, extracts for parenteral administration were developed. In 1930, Cohn and his associates[13] reported the successful use of a refined extract administered intravenously. Aubertin and Voillemin,[14] Achard and Hamburger,[15] and Gänsslen[16] each reported in the same year satisfactory results from the intramuscular injection of extracts. Because of the greater danger of severe reactions following intravenous injection, the intramuscular route of administration was almost uniformly adopted. The early extracts were crude and retained a high content of inert but sometimes irritating solids. Concentration and refinement finally resulted in the development of an extract low in solids, relatively free from irritating substances, and so concentrated that 1 cc. contained the active material from 100 gm. of whole liver.[17] It was also determined that the anti-pernicious-anemia effect of this extract administered

10. Castle, W. B.: Observations on the Etiologic Relationship of Achylia Gastrica to Pernicious Anemia: Effect of Administration to Patients with Pernicious Anemia of Beef Muscle After Incubation with Normal Gastric Juice, Am. J. M. Sc. **178**: 748-764 (Dec.) 1929.

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16. Gänsslen, M.: Ein hochwirksamer, injizierbarer Leberextrakt, Klin. Wchnschr. **9**: 2099-2102 (Nov. 8) 1930.

17. Murphy, W. P.: Anemia in Practice: Pernicious Anemia, Philadelphia, W. B. Saunders Company, 1939, p. 175.

parenterally was 50 to 100 times greater than that of the liver from which it was prepared. These refined extracts have for many years continued to be the treatment of choice because of their many advantages. These include painless injection because of the absence of irritating substances; a high degree of efficiency in that small amounts given at rather long intervals are adequate and inexpensive; and the necessity for regular periods of observation by the physician, favoring the best clinical control.

Other tissues of the body are known to contain substances that have at least some anti-pernicious-anemia value. Kidney and muscle contain less than liver. Desiccated hog stomach for peroral use has about the same value as ingested liver extracts. The status of folic (pteroylglutamic) acid and vitamin B_{12} in the management of pernicious anemia will be discussed in detail later in this paper. Until the last few years, no method of testing anti-pernicious-anemia content was available, except that of its effect on the patient with pernicious anemia; consequently, each test of a fraction of liver or of a new substance required the availability of one or more patients. Testing for potency in the development of a satisfactory extract for either peroral or parenteral use was at times a difficult and tedious problem because of a dearth of patients. Such a test required enumeration of the reticulocytes daily for 14 days and of the erythrocytes usually twice weekly for a period of several weeks. These studies were important in two respects. By following the reticulocyte and erythrocyte response of a patient receiving a test substance it was possible to demonstrate the potency of the material used. On the other hand, a response to a substance of known high potency was sufficient to establish a diagnosis of pernicious anemia in a patient in whom the diagnosis had not been proved.

As more and more extracts, some of which were of low or questionable potency, became available commercially, it became evident that some degree of standardization should be undertaken. This problem was solved by requiring that certain standards of potency be established for inclusion in the United States Pharmacopoeia. Under the direction of a committee appointed to represent this publication, each extract was rated according to the number of units of anti-pernicious-anemia potency it contained per cubic centimeter. The unit was defined as that amount of substance that, when given daily to a patient in relapse, would produce a rise of the reticulocyte level to a peak according to standards prescribed by the committee and that also produced a satisfactory erythrocyte response during a period of 28 days. Although this procedure has not been entirely satisfactory, it has introduced a certain amount of uniformity in the characterization of commercial extracts. This has allowed the physician to prescribe or to administer these extracts with a degree of certainty as to the effect they would produce.

EFFECTIVENESS OF LIVER EXTRACTS

As previously mentioned, treatment in the first years consisted of daily ingestion of 200 gm. of cooked or raw whole liver during the period of relapse or when the erythrocyte level was low. As this level reached normal, about 5 million, it was possible to decrease the intake to perhaps 450 to 1,000 gm. of liver per week in order to maintain the patient in a satisfactory condition. Treatment by this means was highly satisfactory in most respects, but some patients experienced difficulty in ingesting the required amount; consequently, complete control of all phases of the disease was not always possible. Treatment by means of the peroral extracts, which were dissolved in some desirable fluid medium, usually water, was carried out in the same manner. These were also difficult for some patients to take and were relatively expensive, so that, at times, complete control was not attained. With the introduction of the more refined extracts for parenteral administration, resulting in greater accuracy of dosage, greater ease of administration with relatively less expense to the patient, and more regular observation by the physician, control of all the manifestations of the disease is limited only by the degree of cooperation of the patient.

Treatment during relapse with the parenteral extract has usually consisted of intramuscular injection on the first day or during the first week of an amount of extract that will supply from 30 to 60 U. S. P. units of anti-pernicious-anemia potency. Thereafter 15 units of potency is given weekly until the blood levels have reached normal. The patient is then maintained in a state of control by administration of 15 units as often as is found necessary. It must be borne in mind that the requirement for complete control varies greatly, and the best results of treatment can be attained only by satisfying each patient's individual requirement. Treatment by standardization of the dosage on the basis of the average requirement will result in failure in some instances to attain the highest standard of control possible.

Following intramuscular injection of a highly potent extract, the reticulocyte response may start as early as 24 hours later and reach its peak by the fifth day. The reticulocyte rise will depend largely on the quantity of potent material supplied and the level of the erythrocytes when treatment is started. The lower the erythrocyte level the greater will be the reticulocyte response. The erythrocyte level increases at a more or less regular rate to reach about 4 million by the 28th day, irrespective of the original level, so that the rate of increase is also greater the lower the initial level. With the increase in erythrocytes, the icteric index drops to normal and the leukocyte and platelet levels, often low during relapse, increase to normal. The hemoglobin level usually increases with that of the erythrocytes but may lag in some patients, owing to an insufficient supply of iron. This lag is readily corrected by the ingestion of therapeutic doses of iron.

Shortly after beginning treatment and usually by the time the reticulocyte peak is reached, there is likely to be a dramatic change in the patient's general well-being. He has an increased appetite, his strength is improved, his color begins to look pink instead of waxy, and his entire outlook changes. The glossitis, if present, disappears, and diarrhea, which is troublesome in a small percentage of patients, is controlled. If the diarrhea persists ingestion with meals of 20 to 40 drops of diluted hydrochloric acid in a glass of water may be effective. Disturbances caused by destruction of the nerves in the central nervous system are controlled and usually are strikingly improved. The degree of improvement, partic-

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ularly when locomotor difficulty has occurred, depends in a large part on the severity of the disturbance. This in turn is largely dependent on the duration of neural involvement before treatment is started. The central nervous system rarely will become involved if adequate dosage of liver or its extracts has been given and is continued throughout the life of the patient to maintain the blood in a normal state.

SEARCH FOR ACTIVE LIVER PRINCIPLE

Since the development of extracts of liver, work has been carried on by several groups in an effort to recognize and isolate the active principle of liver. The developments leading up to our present knowledge of folic acid are too many and too complicated to be reviewed in detail here. The demonstration by Wills [18] as early as 1931 of an effect of crude liver and yeast extracts on tropical macrocytic anemia not obtained with refined liver extracts was probably one of the earliest indications of the hemopoietic effect of what is now known as folic acid. A dietary factor in yeast essential for the growth of chicks (factor U) was described by Stokstad and Manning.[19] A chick antianemia factor (Bc) and vitamin M, necessary to prevent nutritional deficiency in monkeys, were studied. Snell and Peterson [20] demonstrated that both liver and yeast contain a factor necessary for the growth of Lactobacillus casei, later found to be present also in spinach and grasses, from which the name "folic acid" originated. These are now all believed to be members of a group of biologically active substances, the pteroylglutamates.

It was not until the isolation and synthesis of folic (pteroylglutamic) acid in 1946 by Angier and associates [21] that attention was directed to this substance as an important hemopoietic factor in the macrocytic anemias of man. Spies and associates [22] were perhaps the first to use folic acid clinically as the L. casei factor. In a short time there followed papers by Spies, Doan, Darby, and their associates [23] describing the hematological value of folic acid in pernicious anemia, nutritional macrocytic anemia, and sprue. The favorable publicity in the lay press of the fact that folic acid is an effective hemopoietic substance when ingested precipitated popular but temporary demand for folic acid for the treatment of pernicious anemia, as opposed to the commoner use of parenterally administered liver extract. Reports by Meyer, Hall and his associates,[24] and others soon appeared, indicating that the neural disturbances present in pernicious anemia are not controlled by folic acid and that it is, therefore, not a satisfactory substitute for liver and its extracts. Much work has since been directed toward a better understanding of its role in nutrition and hemopoiesis, and its place as one of the more important members of the vitamin B complex has been established.

The demonstration by Shorb,[25] in 1947, of the presence in refined liver extracts of a factor required for growth by L. lactis Dorner (LLD) in amounts comparable to the anti-pernicious-anemia potency of these extracts led to the belief that this factor might be the active principle of the extracts. Rickes and his associates [26] then were able to isolate from liver a red, crystalline compound containing cobalt, probably the LLD factor of Shorb, which produces a hematological response in patients with pernicious anemia when given in minute doses parenterally. This material was designated as vitamin B_{12}. At about the same time Smith,[27] working in England, reported the isolation of an anti-pernicious-anemia factor that is presumably vitamin B_{12}. Preliminary clinical tests of crystalline vitamin B_{12} as well as of an impure amorphous concentrate of this substance carried out by West [28] demonstrated its effectiveness in patients with pernicious anemia. This was further confirmed by West and Reisner [29] in their report before the Association of American Physicians in May, 1949: "a crystalline preparation of vitamin B_{12} is effective in inducing complete hematological and neurological remissions" in patients with pernicious anemia. This report was made just 23 years after the original report of Minot and Murphy,[8] before the same society, of the value of liver in the treatment of the disease. Ungley [30] reported correspondingly excellent results using the material prepared by Smith.

Subsequent work has supported the belief that vitamin B_{12} is the factor or one of the factors of liver and its extracts that is effective in the treatment of pernicious anemia. The fact that it is effective when administered parenterally and is so only in much larger doses when ingested has led to the belief that it not only is the extrinsic factor of Castle but is actually the anti-pernicious-anemia factor. Hall [31] observed that the response to orally administered vitamin B_{12} in doses up to 100 times the minimal effective dose for parenteral administration was variable and unpredictable but that its effectiveness might be increased by providing a known source of intrinsic factor such as the gastric juice of normal human beings and extracts of the stomach and intestines of swine. The efficacy of ingested whole mammalian liver as a hemopoietic in megaloblastic anemias and for control of the central nervous system degeneration in those with associated achlorhydria is well known. Liver con-

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tains both folic acid and vitamin B_{12}. The quantity of vitamin B_{12} present in therapeutically effective amounts of liver is less than the amount of the crystalline form that is effective when administered by the oral route. The quantity of folic acid present is also small, and, although it may be effective for hemopoiesis when ingested, it does not control the central nervous system changes. Meyer and his associates [32] reported favorable results from the oral administration of vitamin B_{12} combined with minimal amounts of folic acid. These and other data accumulating suggest that there is a cooperative action between folic acid (and/or its conjugates) and vitamin B_{12} for the control of hemopoiesis in megaloblastic anemia and of central nervous system function in the presence of achlorhydria. Vitamin B_{12} may act within the body to convert folic acid conjugates to folic acid so that they become available for hemopoiesis or it may enhance the utilization of folic acid for the protein metabolism of blood formation. In view of the rapidly accumulating knowledge of the mechanism of the effect of liver in the megaloblastic anemias, it may be desirable to revise the present concept of the nature of the intrinsic factor or the role it plays in the utilization of the anti-pernicious-anemia factor.[33]

RESULTS OF TREATMENT

The satisfactory results obtained by the use of liver and its extracts in the treatment of pernicious anemia are well known. It has been possible not only to prolong the life of these patients but also to maintain a high percentage of them in an excellent state of economic efficiency. Only those few in whom extreme neural difficulty develops before adequate treatment is started are unable to carry on their usual occupations. It is difficult to evaluate accurately the number of years that have been added to the lives of the great number of these patients throughout the world. The reports of the United States Office of Vital Statistics show that in 1925 there were 5,949 deaths recorded as caused by pernicious anemia within the registration area of the United States, a rate of 5.8 per 100,000, whereas in 1948 there were 1,453 deaths, a rate of 1.0 per 100,000. Charts prepared by the Metropolitan Life Insurance Company [34] show even more strikingly the decline in mortality as observed in the various age groups. It is possible that the number of deaths from pernicious anemia is actually less than the records show, for although these persons had pernicious anemia, the actual cause of death in some cases may have been attributable to some other disease. In an attempt to determine the causes of death in my own patients, I have assembled data on 226 patients known to have died. The cause of death could not be determined in 23 of these. Of the remaining 203 patients, 86 died as the result of disease involving the cardiovascular system: 32 from cerebral accident (thrombosis or hemorrhage), 28 from heart failure, primarily the result of hypertensive, arteriosclerotic disease of the myocardium, and 26 from acute coronary occlusion. Malignant disease, the next most frequent cause of death, accounted for 46; in 22 of these, the malignancy was primarily located in the stomach. Twenty patients died from pneumonia, 14 from conditions that could be directly traced to pernicious anemia, and 11 from pulmonary embolus. Nine died as a result of accidents, five from chronic nephritis, four from infection other than pneumonia, and eight from miscellaneous causes.

The picture is actually brighter than that depicted if the data presented are considered in somewhat greater detail; for example, the deaths from pneumonia and other infections occurred before sulfonamides and antibiotics became generally available, except in three or four patients whose complications made treatment ineffective. Of the 14 patients listed as having died from pernicious anemia, 5 became insane, were institutionalized, and refused treatment. Five died as the result of complications arising from extreme spinal cord damage present before treatment was started; two others died of pneumonia at a time when their blood was in a state of relapse; and in two the cause of death recorded on the death certificate by their family physicians was pernicious anemia. It should be noted that the 226 patients who died represent less than 15% of the total number of patients observed, the majority of whom are living. Of the 226 patients, 26 died between the ages of 80 and 89, whereas 77 died between the ages of 70 and 79; thus, 46% of the group lived to 70 years of age or older. Sixty-five per cent of the deaths of known cause resulted from diseases commonest in the older age category, i. e., arteriosclerotic-cardiovascular disease and malignant disease. It is evident that the lives of patients with pernicious anemia are being prolonged to the age when the now largely uncontrollable diseases of old age take their toll. To prolong life beyond the average expectancy in the general population could hardly be expected, but, with judicious use of the therapeutic measures now available, the results will be even more encouraging. To illustrate this point, I refer to one of my most interesting patients.

REPORT OF A CASE

A 54-year-old woman of Scottish birth first came under observation in the hospital outpatient clinic in 1915. She was observed from time to time for minor complaints until May, 1926, when she was admitted to the hospital with a diagnosis of pernicious anemia. A prompt and satisfactory remission followed the daily ingestion of 200 gm. of whole liver. She was followed in the blood clinic thereafter but was readmitted to the hospital in 1931, at which time hypertension and generalized arteriosclerosis was observed. In June, 1932, diabetes mellitus developed and was controlled with the use of insulin. In May, 1935, an epidermoid carcinoma of the forehead was excised surgically, with no recurrence. In 1940, another epidermoid carcinoma of the lip was successfully treated by roentgen rays, and in January, 1941, lobar pneumonia was successfully treated with sulfathiazole. But in July, 1941, at the age of 80, the patient died following a cerebral accident that occurred during an altercation with an unreasonable landlady. This patient was treated successfully with five specific means of therapy, but it was not possible to control the progress of arteriosclerotic vascular disease or the demands of an unsympathetic landlady.

Sir William Osler once said that the way to live long is to acquire a chronic illness and then to take care of it. This observation is well borne out by the results observed in patients with pernicious anemia, as shown by data on patients who are still living. In a group of 200 living

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34. Metropolitan Life Insurance Co.: Pernicious Anemia Death Rate Extremely Low, Statistical Bulletin **29**: 9-10 (Oct.) 1948.

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patients reviewed, 94% are now 60 years of age or older, whereas only 81% of the deceased patients had reached the age of 60. Although this difference may not appear impressive, a comparison of the duration of life from the onset of the disease in the two groups gives a much better idea of the value of liver therapy. Sixty-two per cent of the living patients have already been followed for 15 years or more, whereas only 20% of those who died were treated for that length of time.

COMMENT AND CONCLUSIONS

The final chapter in the story of pernicious anemia is yet to be written. It is possible, with our present knowledge of the disease, to prevent the occurrence of the common manifestations, particularly those that result from destruction of the nerves of the central nervous system, the most incapacitating and hazardous features of the disease. Histamine-fast achlorhydria is the result of a congenital defect of the mucosa of the stomach and is probably present from birth in the person who, at some time, presents other evidences of the disease. The well-recognized familial incidence of pernicious anemia should make it possible to anticipate the disease in other members of the families of these patients and to start preventive therapy in those with achlorhydria. The physician should be alert to the earliest signs and symptoms in all patients who present themselves for study. Even slight anemia, glossitis, numbness, tingling or hyperesthesia of the hands or feet, and the somewhat vague complaints of easy fatigability and weakness should suggest the need for determination of the patient's gastric acidity. In this way the disease may be recognized before damage has resulted. Although pernicious anemia is generally considered to be a disease that occurs at or above the midyears of life, manifestations probably go unrecognized for many years. A severe anemia in a girl 10 years of age was recognized as being pernicious in type, and treatment produced the expected response. She has continued well for 16 years with regular treatment, except for one relapse that occurred when she was unable to receive treatment. She is married and has two children. It is of interest to note that evidence of the disease first appeared in her mother about five years ago. I now have under treatment a fairly large group of patients in whom the disease was recognized in its incipient state and who will consequently avoid the more distressing manifestations.

The recent demonstration by Segal and his associates[35] of a method for determining the presence or absence of free hydrochloric acid in the stomach by means of an ion-exchange resin, in place of the usual unpleasant method of gastric analysis, should simplify the problem of diagnosis. As both the physician and layman become more acutely aware of the benefits to be derived from liver and its extracts, early recognition and treatment should become practically universal.

20 Gloucester St. (15).

35. Segal, H. L.; Miller, L. L., and Morton, J. J.: Determination of Gastric Acidity Without Intubation by Use of Cation Exchange Indicator Compounds, Proc. Soc. Exper. Biol. & Med. **74**: 218-220 (May) 1950.

FATAL APLASTIC ANEMIA ASSOCIATED WITH CHLORAMPHENICOL (CHLOROMYCETIN®) THERAPY

REPORT OF TWO CASES

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and
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Two cases of fatal aplastic anemia in patients receiving chloramphenicol (chloromycetin®) are reported, and the literature is reviewed briefly. In both patients, a 71-year-old widow and a 92-year-old man, an initial course of treatment with the antibiotic was uneventful, but resumption of therapy after an interval of several weeks was associated with hematological complications.

REPORT OF CASES

CASE 1.—R. C. B., a 71-year-old white physician's wife, complained of weakness and a rash on her legs in January, 1952. When examined by one of us (A. A. H.), who had attended her for 15 years, discrete and confluent petechiae and ecchymoses were found in widespread distribution, including the oral mucosa. Except for the purpura, her physical condition was the same as it had been for years.

There was no history or familial history of asthma, hay fever, urticaria, or blood dyscrasia. Since 1932 the patient had intermittently followed a dietary regimen, previously prescribed by her husband, which eliminated animal protein and fruit. Although this regimen continued to afford gratifying relief from migraine headaches, malnutrition, peripheral neuritis, secondary anemia, and faulty gastrointestinal function developed in their stead. In 1948 auricular fibrillation and mild, congestive heart failure appeared. The response to digitalization and dietary salt restriction was satisfactory. Her chronic complaint of "indigestion" was virtually eliminated in 1949 when pancreatin was prescribed to be taken with her meals.

The onset of pneumonitis in March, 1951, was accompanied by elevation of temperature, pleuritic pain, dullness of percussion, and crepitant rales. Chloramphenicol, 0.5 gm., was given every six hours for eight doses and then the dose was reduced to 0.25 gm. for another eight doses. The response was excellent and lasting. A second, identical course of chloramphenicol was prescribed in October, 1951, for an acute attack of pharyngitis and cervical lymphadenopathy. The results were equally good.

Physical examination at the patient's home on Jan. 17, 1952, revealed an elderly, emaciated woman who weighed 92 lb. (41.7 kg.). Generalized purpura was present. The heart was enlarged. The apex rate was 84 per minute, and the rhythm totally irregular. Both kidneys and the liver were easily felt, as they had been for years, but the spleen could not be palpated.

On being questioned about her intake of drugs or exposure to toxic agents, the patient declared she had been taking digitoxin and pancreatin steadily as usual, and that for several years she had occasionally taken pyrilamine (neo-antergan®) for nasal

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congestion and a mixture of acetylsalicylic acid, amphetamine sulfate, and acetophenetidin (edrisal®) for neuralgia, as directed by one of us (A. A. H.). Additional drugs consisted of small doses of phenobarbital daily and secobarbital (seconal®) sodium, 0.09 gm., three or four nights weekly.

A blood count revealed 3,910,000 erythrocytes and 2,800 leukocytes per cubic millimeter, a hemoglobin level of 11.5 gm. per 100 cc., and a differential leukocyte count of 7% stab forms, 13% segmented neutrophils, and 80% lymphocytes. Thrombocytes were scant in the blood smear.

A diagnosis of thrombocytopenic purpura with granulocytopenia was made. Administration of all drugs except digitalis and pancreatin was stopped at once. The patient was advised to enter a hospital, but she refused. A blood count on Jan. 22 revealed little change. On Jan. 29, 1952, there were 2,570,000 erythrocytes and 2,650 leukocytes per cubic millimeter; the hemoglobin level was 8.0 gm. per 100 cc. The differential leukocyte count revealed 5% stab forms, 14% segmented neutrophils, 1% monocytes, and 80% lymphocytes. Whole blood transfusions (500 cc.) were given on Jan. 29, 30, and 31, but results of a blood count on Feb. 4, 1952, were essentially the same as those of Jan. 29. The clinical course was slowly downhill, with increasing weakness and purpura.

About this time the patient confessed that without the knowledge or consent of her physician she had persuaded her druggist to refill a prescription for 24 capsules of chloramphenicol in November and again in December, 1951. She stated that she had been so impressed by the efficacy of the drug that she had used it "to ward off infections" or "to counteract occasional slight colds or swollen neck glands." She estimated that she had taken at least 48 capsules (12.0 gm.) of the antibiotic in this manner. The total amount of chloramphenicol ingested from March, 1951, through December, 1951, was 24.0 gm.

The patient was admitted to Columbia Hospital on Feb. 9, 1952, for daily whole blood transfusions and slow infusion of 12.5 gm. of corticotropin (ACTH). A transient increase in the number of thrombocytes and granulocytes occurred, but the purpura became more intense; pleurisy appeared in the right side of the chest followed by bronchopneumonia and circulatory collapse. She died on Feb. 14, 1952, one month after the onset of acute symptoms. Pertinent findings at autopsy included acute pleurisy on the right, bilateral bronchopneumonia, atrophy and fibrosis of the pancreas, petechiae and ecchymoses in skin, heart, and adrenals, extensive gastrointestinal hemorrhage, and aplasia of the bone marrow.

CASE 2.—J. M. G., a vigorous, well-preserved 92-year-old white man, had never been ill or under a physician's care until the gradual onset of nocturia, frequency, and urgency was noted in January, 1951. Sulfacetamide (sulamyd®) was prescribed for pyuria discovered by the patient's local physician, but the treatment was discontinued after several weeks because of anorexia and nausea. Chloramphenicol, 0.5 gm. six times daily, and penicillin, 300,000 units, were substituted on March 18, 1951, when acute urinary retention developed, and the combination was given daily thereafter until the patient was transferred to the urology service of another hospital on March 25, 1951. An admission blood count revealed 4,000,000 erythrocytes per cubic millimeter, 12.6 gm. of hemoglobin per 100 cc., and 13,000 leukocytes per cubic millimeter. The differential leukocyte count was normal except for neutrophilia. The thrombocyte count was normal.

Bilateral vasectomy and transurethral prostatectomy were performed on March 30, 1951, and 190 gm. of tissue, which revealed "benign prostatic hyperplasia," was removed. One liter of whole blood was transfused during the operation without incident. Postoperative bleeding was minimal. Prior to discharge on April 8, 1951, the patient's blood contained 3,600,000 erythrocytes per cubic millimeter, 11.8 gm. of hemoglobin per 100 cc., and 10,800 leukocytes per cubic millimeter. The blood nonprotein nitrogen and creatinine levels were normal.

On discharge from the hospital, he was given a maintenance dose of chloramphenicol, 1.5 gm., daily. Within two weeks acute cystitis developed. The chloramphenicol dose was increased to 3.0 gm. daily for two weeks, and then was reduced to 1.5 gm. daily for seven more days after the infection had cleared. A total of 91.5 gm. of the antibiotic was ingested from March 18, 1951, through May 15, 1951.

The patient's health remained good until July 5, 1951, when a single, small conjunctival hemorrhage was noted. The gradual onset of easy fatigability, weakness, headache, palpitation, and dyspnea on exertion occurred during the summer. In spite of a course of rutin therapy, showers of petechiae were observed. On Oct. 26, 1951, a blood count revealed 1,000,000 erythrocytes and 2,100 leukocytes per cubic millimeter, 4.0 gm. hemoglobin per 100 cc., and a differential leukocyte count of 28% granulocytes, 59% lymphocytes, and 9% monocytes. There were 25,000 thrombocytes per cubic millimeter; the bleeding time was 13 minutes. The results of the physical examination were not remarkable except for scattered petechiae.

Multiple blood transfusions produced only temporary elevation of erythrocyte and hemoglobin levels; weekly and biweekly transfusions became necessary. When he was seen in consultation on Nov. 28, 1951, by one of us (D. B. C.), purpura of moderate severity covered the skin and oral mucosa; the liver, spleen, and superficial lymph nodes were not enlarged. The peripheral blood contained 3,000,000 erythrocytes per cubic millimeter, 9.6 gm. hemoglobin per 100 cc., and 3,000 leukocytes per cubic millimeter, of which 22% were segmented neutrophils, 8% eosinophils (the patient was receiving injections of crude liver extract), and 70% lymphocytes. The hematocrit reading was 29%; the mean corpuscular volume was 96 cubic microns, mean corpuscular hemoglobin 32 micromicrograms, and mean corpuscular hemoglobin concentration 33%. The whole blood iron level was 32.5 mg. per 100 cc., and the serum hemoglobin 3.4 mg. per 100 cc. The reticulocyte level was 0.6%. The Coombs' test was negative. Bone marrow examination revealed almost complete absence of hemopoietic elements; only a few reticuloendothelial cells, plasma cells, and lymphocytes remained. On quantitative examination the fat layer was 8%, plasma layer 57.8%, myeloid-erythroid layer 0.2%, and erythrocyte layer 34%. A diagnosis of acute "toxic" aplastic anemia was made.

The subsequent clinical course was not significantly modified by therapeutic trials with crude liver extract, folic acid, vitamin B_{12}, rutin, ascorbic acid, and vitamins. However, transient improvement in the severity of the purpura was produced by cortisone. Sixteen 500 cc. transfusions of whole blood were given from Oct. 26, 1951, to Jan. 22, 1952, when the patient died at his home of cerebral hemorrhage.

COMMENT

The discovery of a new antibiotic, chloramphenicol, by Ehrlich, Burkholder and others [1] in 1947 was followed by extensive investigations in the Research Laboratories of Parke, Davis and Company. Ley and associates [2] administered the agent to normal human subjects in 1948 and found it relatively nontoxic. Rebstock, Crooks, Controulis, and Bartz [3] determined the chemical structure of chloramphenicol, and pointed out that it was "the first naturally occurring compound which contains a nitro group or which is a derivative of dichloracetic acid." That the drug might be toxic for the hemopoietic system because of the presence of the nitro group was suggested in 1949 by Smadel.[4] However, in a report of his experiences with chloramphenicol in the effective treatment of rickettsial diseases, typhoid, brucellosis, and gonorrhea, no case of significant hemic involvement was cited.

The same year Volini and co-workers [5] observed marrow depression in three patients who received from 30 to 60 gm. of the drug in 9 to 13 days. In each case the

1. Ehrlich, J., and others: Chloromycetin: New Antibiotic from Soil Actinomycete, Science **106**: 417 (Oct. 31) 1947
2. Ley, H. L., Jr.; Smadel, J. E., and Crocker, T. T.: Administration of Chloromycetin to Normal Human Subjects, Proc. Soc. Exper. Biol. & Med. **68**: 9 (May) 1948.
3. Rebstock, M. C.; Crooks, H. M., Jr.; Controulis, J., and Bartz, Q. R.: Chloramphenicol (Chloromycetin): IV. Chemical Studies, J. Am. Chem. Soc. **71**: 2458 (July) 1949.
4. Smadel, J. E.: Chloramphenicol (Chloromycetin) in Treatment of Infectious Diseases, Am. J. Med. **7**: 671 (Nov.) 1949.
5. Volini, I. F., and others: Hemopoietic Changes During Chloromycetin Administration, Proc. Central Soc. Clin. Research **22**: 74, 1949.

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marrow returned to normal after treatment was stopped. Gill [6] reported two cases of agranulocytosis that cleared when chloramphenicol therapy was discontinued. Fatal cases of aplastic anemia were described by Rich and associates [7] and Loyd.[8] Rich's case was that of a 63-year-old man who received approximately 56.5 gm. of chloramphenicol in three months for a urinary infection; Loyd's case was that of a 28-year-old woman who had received chloramphenicol intermittently for one year before administration of 7.5 gm. in a five week period for urinary tract infection. In neither case was there an antecedent history of allergy or of ingestion of coal tar derivatives, nor was there any response to therapy. At autopsy petechiae and ecchymoses were found in all the organs, while the bone marrow was aplastic.

By reporting the third and fourth cases of fatal aplastic anemia associated with chloramphenicol therapy, we wish to reemphasize the serious consequences that may follow use of this agent. The need for such emphasis is well illustrated by the absence of any mention of chloramphenicol in a recent survey [9] of 107 drug fatalities reported in the literature since December, 1946.

SUMMARY AND CONCLUSIONS

Our patients were elderly but well-preserved persons who had no history of hay fever, asthma, or ingestion of other drugs containing a nitrobenzene radical. In case 1 the initial course of chloramphenicol was given in March, 1951, for four days; a subsequent course was prescribed in October and the ingestion of the medication was continued intermittently into November and December, 1951. Purpura appeared about two weeks later. In case 2 therapy was also begun in March, 1951. It was continued through April and terminated in May, 1951. Purpura did not appear until six weeks later. The onset of purpura in each instance was accompanied by granulocytopenia, leukopenia, thrombocytopenia, and anemia, which gradually increased in severity. Transient clinical improvement followed administration of corticotropin (ACTH) and cortisone, which did not reduce the need for whole blood or prevent fatal hemorrhages.

In our opinion careful evaluation should be made of the hematological status of candidates for chloramphenicol therapy, and the drug should not be prescribed when leukopenia or marrow hypoplasia are present. Patients receiving chloramphenicol should be followed with biweekly blood counts so that early signs of marrow injury may be discovered and the antibiotic discontinued while the capacity for effective hemopoietic regeneration exists. Although chronically ill, debilitated, or aged patients seem more susceptible to the toxic action of this agent, no common denominator has yet been found. If self-administration and careless supervision of the use of chloramphenicol can be eliminated, this valuable and relatively nontoxic drug will attain its rightful place in our armamentarium.

6. Gill, P. F.: Agranulocytopenia Following "Chloromycetin": Report on 2 Cases, M. J. Australia **1**: 768 (June 10) 1950.

7. Rich, M. L.; Ritterhoff, R. J., and Hoffmann, R. J.: Fatal Case of Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy, Ann. Int. Med. **33**: 1459 (Dec.) 1950.

8. Loyd, E. L.: Aplastic Anemia Due to Chloramphenicol, Antibiotics & Chemotherapy **2**: 1 (Jan.) 1952.

9. Flaxman, N.: Drug Fatalities, J. A. M. A. **147**: 377 (Sept. 29) 1951.

FATAL APLASTIC ANEMIA FOLLOWING CHLORAMPHENICOL (CHLOROMYCETIN®) ADMINISTRATION

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and
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Reports of serious toxic effects following administration of chloramphenicol have been few. After the chemical structure of this antibiotic became established, the presence of a nitrobenzene radical caused some apprehension in regard to potential toxicity.[1] The early toxicity studies on animals [2] and man [3] led to the conclusion that chloramphenicol is of low toxicity. Later hematological observations on animals following administration of chloramphenicol by various routes were believed to reveal no deleterious effects that could be ascribed to the drug. Smith and co-workers [4] found that anemia developed following intramuscular administration of chloramphenicol to dogs in a dosage of 0.05 to 0.1 gm. per kilogram of body weight. No change occurred in the total or differential white blood cell count. Anemia did not follow oral administration. Gruhzit and associates,[5] using dogs, administered chloramphenicol by different routes for as long as four months in a dosage of 0.1 to 0.2 gm. per kilogram of body weight. Definite anemia did develop in the dogs receiving chloramphenicol intramuscularly, but this was ascribed to coincidental distemper infection and local reaction at the site of injection. The red blood cell count increased as the dogs improved, despite continued administration of the drug. No other hemopoietic changes were observed.

Much clinical experience in the use of chloramphenicol has been reported. In reviewing this experience, Smadel [6] reported no hemopoietic toxicity even following prolonged or intermittent treatment. No ill effects followed re-treatment of typhoid after discontinuation of chloramphenicol therapy.[7] He referred also to the ingestion by volunteers in hyperendemic typhus areas of 40 gm. of chloramphenicol over a two month period without signs of toxicity developing. In surgical infections, Altemeier and Culbertson observed no anemia or leukopenia.[8] Italian workers [9] have devoted considerable attention to the hemopoietic status of patients and normal subjects given chloramphenicol. No undesirable changes were

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1. Crooks, H. M., Jr.: Chemistry of Chloromycetin, Bull. N. Y. Acad. Med. **25**: 794, 1949.

noted, although a variable neutropenia was reported by Bassi [10] in all patients treated with chloramphenicol.

The first suggestion of toxicity to the hemopoietic system is found in the report by Volini and associates.[11] These workers observed the rapid development of anemia and granulocytopenia in one patient and granulocytopenia in two others during the course of chloramphenicol therapy. Granulocytopenia was described in two children receiving chloramphenicol by Gill,[12] and is mentioned among other side-effects of the drug by Tomaszewski.[13] Rich and associates [14] were the first to report a case in which aplastic anemia was believed to have followed chloramphenicol administration.

Since the present paper was prepared, an additional report of development of aplastic anemia following administration of chloramphenicol has appeared.[15] The drug in this case was administered intermittently over a period of 13 months to a 28-year-old woman with a urinary tract infection. Six weeks after the last administration, petechiae developed, and death followed 10 days later. A complete autopsy report is included; this revealed findings compatible with the diagnosis of aplastic anemia. The cases reported here suggest a relationship between previous chloramphenicol ingestion and the development of aplastic anemia.

REPORT OF CASES

CASE 1.—K. M., a 29-year-old white cattle rancher, was admitted to the Salt Lake General Hospital on Nov. 19, 1950. Four weeks prior to admission, petechial hemorrhages over the lower extremities were noted. Two weeks before admission persistent epistaxis occurred for two days. Because of easy bruising, slight sore throat, loss of strength, and elevation of temperature to 103 F, he was admitted to another hospital. Blood examination revealed pancytopenia, and, during the nine day period before admission to our hospital, he had received five blood transfusions, 1.1 gm. of cortisone, and penicillin.

Inquiry into the past history disclosed that the patient had been referred to a consultant in August, 1949, because of persistent urticaria and discomfort in the upper gastrointestinal tract of some years' duration. At this time the volume of packed red cells was 50 ml. per 100 ml. of blood, the white blood cell count was 5,400 per cubic millimeter, and the differential count was normal. Roentgenographic study of the gastrointestinal tract revealed a duodenal deformity. He was instructed to take chloramphenicol capsules, 0.25 gm. twice daily, for 14 days. Thereafter he was to take the same dose for the first six days of each month. Another blood examination in November, 1949, revealed no changes. This unusual regimen was continued until May, 1950. His blood in March, 1950, remained normal. The volume of packed red cells was 48, the white cell count 5,600, with 1% stab-forms, 41% polymorphonuclears, 5% eosinophils, 50% lymphocytes, and 3% monocytes.

Antacids were used irregularly during this period, and a brief course of autogenous vaccine was instituted between May and August, 1950. No other drugs were administered. In August, 1950, he was seen by the same consultant for a periodic reexamination. No blood examination was done. Between Sept. 1, 1950, and the middle of October, 1950, he resumed chloramphenicol ingestion and took 24 0.25 gm. capsules. Petechiae on the lower extremities appeared one week later.

Physical examination on admission revealed slight pallor with normal pulse, respiration rate, and temperature. There was clotted blood in the right nostril, and many petechiae were present over the legs and thighs. A few small lymph nodes were palpable in the cervical and axillary regions. The spleen could not be felt.

Laboratory data on admission were as follows: there were 4,070,000 red blood cells per cubic millimeter, and the hemoglobin level was 13.8 gm. per 100 cc. The volume of packed red cells was 36.5 ml. per 100 ml., the mean corpuscular volume was 90 cubic microns, and the mean corpuscular hemoglobin concentration was 38%. There were 0.1% reticulocytes. There were 3,350 white blood cells per cubic millimeter, of which 7% were juvenile cells, 26% polymorphonuclears, 52% lymphocytes, and 15% monocytes. The icterus index was less than 5. The thrombocyte count was 18,000 per cubic millimeter. The bleeding time was greater than 12 minutes, and 62% of the clot volume was extracorpuscular (normal is less than 30%). The coagulation time was 11 minutes and 30 seconds, and the tourniquet test was markedly positive. Urinalysis and chest roentgenograms revealed no abnormalities. Bone marrow was aspirated from the sternum and iliac crest, but these aspirations yielded material with few cells. From 60 to 80% of the cells were lymphocytes, and only 1 to 2% of the nucleated cells were of the red cell series (table 1). In the iliac crest aspiration on Nov. 20, 1950, the very few nucleated cells obtained were lymphocytes and occasional monocytes. Surgical biopsy of the sternum showed marrow spaces that contained mainly fat, with only a few nucleated cells and no megakaryocytes, that is, there was severe hypoplasia (see figure).

From the time of admission until Dec. 6, 1950, the patient was observed closely, and the previously described studies were performed. He was treated symptomatically, and three blood transfusions were given. On Dec. 6, signs of intracranial hemorrhage appeared. Administration of 100 mg. of corticotropin (ACTH) daily was started. There was no obvious improvement during 12 days of this therapy, but there was no progression of the signs that had suggested intracranial hemorrhage. Since the outlook was very poor, it was thought that even desperate measures might be tried. Because we had observed improvement following splenectomy in two cases of aplastic anemia,[16] it was decided that this operation might be justifiable in spite of the great risk. On Dec. 18, 1950, the procedure was carried out. The patient withstood the operation successfully, but, apart from postsplenectomy leukocytosis, no definite clinical or hematological improvement took place in the month of observation that followed splenectomy. The leukocyte count decreased to leukopenic levels by Jan. 25, 1951. A 10 day period of treatment with cortisone had no effect.

TABLE 1.—*Bone Marrow Observations in Case 1*

	Findings on Aspiration Biopsy		
Date	11-20-50	11-20-50	12-14-50
Site	Sternum	Ilium	Ilium
General comment	Few cells	Very few cells, mostly lymphocytes	Few cells
Blast forms	3.7%	.....	1.6%
Promyelocytes	.....	.....	0.3%
Myelocytes	0.6%	.....	0.3%
Metamyelocytes	2.0%	.....	4.3%
Polymorphonuclears	9.7%	.....	22.2%
Lymphocytes	82.3%	.....	63.3%
Monocytes	1.3%	.....	5.0%
Basophilic Normoblasts	0.3%	.....	1.0%
Polychromatophilic Normoblasts	.....	.....	.....
Orthochromatophilic Normoblasts	.....	.....	2.0%
Megakaryocytes	None seen	None seen	None seen

2. Smadel, J. E., and Jackson, E. B.: Chloromycetin, an Antibiotic with Chemotherapeutic Activity in Experimental Rickettsial and Viral Infections, Science **106**: 418, 1947.

3. Ley, H. L., Jr.; Smadel, J. E., and Crocker, T. T.: Administration of Chloromycetin to Normal Human Subjects, Proc. Soc. Exper. Biol. & Med. **68**: 9, 1948.

4. Smith, R. M., and others: Chloromycetin: Biological Studies, J. Bact. **55**: 425, 1948.

5. Gruhzit, O. M.; Fisken, R. A.; Reutner, T. F., and Martino, E.: Chloramphenicol (Chloromycetin), an Antibiotic: Pharmacological and Pathological Studies in Animals, J. Clin. Investigation **28**: 943, 1949.

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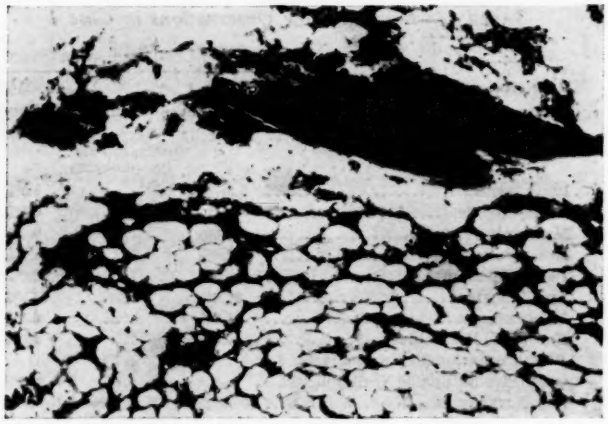
For prolonged periods after operation there had been elevation of the temperature to 102 or 103 F for no detectable reason. On Feb. 20, 1951, signs of rapidly progressive intracranial hemorrhage developed, and the patient died in coma the next day, four months after the onset of symptoms. Autopsy permission was refused. At no time was there any evidence of leukemia; the spleen removed at operation weighed 113 gm. and appeared grossly normal. Microscopic examination showed reticulum hyperplasia, a few foci of myelopoiesis, and moderately severe hemosiderosis.

CASE 2.—S. C., a 6-year-old girl, was admitted to the Salt Lake General Hospital on March 16, 1951. Since December, 1950, spontaneous bruising and severe recurrent epistaxes had occurred. Pancytopenia had been found elsewhere, and she had been treated with frequent transfusions during this period.

The past medical history revealed that in March, 1950, she had been given 16 chloramphenicol capsules (0.25 gm. in each capsule) over a period of one week for an upper respiratory tract infection. In October, 1950, she received seven more capsules of chloramphenicol, and in the ensuing days took one or two capsules sporadically for "the sniffles." In November, 1950, a portion of 16 prescribed chloramphenicol capsules (0.25 gm. in each capsule) were taken for similar reasons. The exact amount could not be determined. The only medications other than chloramphenicol she had received were vitamins and acetylsalicylic acid (aspirin). Urticaria had occurred at age 4 following



Specimen obtained by bone marrow biopsy in case 1.

administration of penicillin and sulfonamides, and some time later a "rash" appeared after use of the same drugs. The patient's mother gave a history of hay fever.

Physical examination on admission revealed a pulse rate of 100 per minute, temperature of 99.8 F, blood pressure of 140/90 mm. Hg, and respiration rate of 20 per minute. The skin was tan-yellow in color and the tip of the nose was quite yellow, but the scleras were white. A history of ingestion of large amounts of carrot juice helped to explain the curious pigmentation. Scattered ecchymoses were present over the body, with a few petechiae on the buttocks and thighs. There was clotted blood in both nostrils and bleeding from the gums. No lymphadenopathy, splenomegaly, or bony tenderness could be found.

Laboratory data on admission were as follows: There were 3,760,000 red blood cells per cubic millimeter, and the hemoglobin level was 11.5 gm. per 100 cc. There were 3,650 white blood cells, with 92% lymphocytes, 5% polymorphonuclears, and 3% monocytes. There were 40,000 thrombocytes per cubic millimeter, and the icterus index was 15. The total serum bilirubin was 0.8 mg. per 100 cc., with 0.1 mg. of the "one minute" type. The bleeding time was 12 minutes, the coagulation time was 13 minutes 30 seconds (normal), and the tourniquet test was markedly positive. The clot showed no retraction in 28 hours. The urine was normal. Aspirated bone marrow was fatty and poorly cellular; 90% of the cells present were small lymphocytes. In an attempt to demonstrate circulating antibodies to chloramphenicol, serum from the patient was injected into the skin of a normal person. No reaction was observed when 10 μg of chloramphenicol were injected into the transfer site.

Cortisone was administered for a total of 37 days, in an initial dose of 100 mg. daily, and later 200 mg. daily. There was no clinical improvement, and the patient continued to require frequent transfusions. Epistaxes, subcutaneous hemorrhage, and hematuria occurred. The leukocyte count increased to 9,600 per cubic millimeter, but 98% of these cells were lymphocytes. Death resulted from uncontrolled gastrointestinal bleeding approximately five months after the onset of symptoms. Autopsy permission was not granted.

CASE 3.—M. J. C., an 8-year-old girl, was admitted to the Salt Lake General Hospital on Oct. 15, 1951. Since about Sept. 1, 1951, petechiae, ecchymoses, and epistaxes had occurred. Two weeks after the appearance of these hemorrhagic manifestations, she was seen by her family doctor because of an earache. Chloramphenicol was given every eight hours for one week. Subsequent blood examination revealed pancytopenia, and she was referred to our hospital for further study.

The past medical history revealed that in October, 1950, and in May, 1951, chloramphenicol had been administered for minor respiratory infections. The mother was told by the family physician at this time that the drug should not be given to the child without his direction. Thereafter, the mother recalled that one bottle of chloramphenicol capsules was used in the treatment of minor infections, but she was uncertain how much she took herself and how much had been given to the child. No other drugs are known to have been administered. The child had played among rose bushes dusted with an insecticide containing benzene hexachloride. Aplastic anemia has not been noted among the acute or chronic toxic effects of this substance.[17] Eczema was said to have been present in infancy.

Physical examination on admission revealed a temperature of 100.6 F, a pulse rate of 140 per minute, and a respiratory rate of 28 per minute. There were signs of healing otitis media in the right ear. Clotted blood was present in the left nostril, and a few fading ecchymoses were visible over the legs and buttocks. There were a few small shotty postauricular and posterior cervical lymph nodes. The spleen could not be palpated, and no other lymph nodes were felt. There was no bony tenderness.

Laboratory data on admission were as follows: There were 3 million red blood cells per cubic millimeter, and the hemoglobin level was 9.9 gm. per 100 cc. The volume of packed red cells was 26 ml. per 100 ml., the mean corpuscular volume was 87 cubic microns, and the mean corpuscular hemoglobin concentration was 38%. There were 1% reticulocytes. There were 3,650 white blood cells per cubic millimeter, with 1% juvenile forms, 12% polymorphonuclears, and 87% lymphocytes. There were 10,000 thrombocytes per cubic millimeter. The bleeding time was only 2 minutes 30 seconds, but was not rechecked. Of the clot volume 70% was extracorpuscular. The tourniquet test was only slightly positive. The icterus index was 5. Urinalysis and chest roentgenograms revealed no abnormalities. Sternal marrow aspiration revealed few cells with many lymphocytes; the remainder of the cells were mostly normoblasts (table 2).

9. Binaghi, G.; Carcassi, U., and Pirastu, C.: Ricerche sul quadro ematologico centrale e periferico di soggetti normali e patologici trattati con alte dose di cloramfenicolo sintetico, Rassegna med. sarda. **1**: 563, 1950. Olivari, G., and de Filippi, P.: Il quadro ematico centrale e periferico nil tifo addominale in rapporto al trattamento con cloroamfenicolo, Hematologica **34**: 965, 1950.

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11. Volini, I. F., and others: Hemopoietic Changes During Administration of Chloramphenicol (Chloromycetin), J. A. M. A. **142**: 1333 (April 29) 1950.

12. Gill, P. F.: Agranulocytopenia Following "Chloromycetin": Report on 2 Cases, M. J. Australia **1**: 768, 1950.

13. Tomaszewski, T.: Side-Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions, Brit. Med. J. **1**: 388, 1951.

14. Rich, M. L.; Ritterhoff, R. J., and Hoffmann, R. J.: A Fatal Case of Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy, Ann. Int. Med. **33**: 1459, 1950.

15. Loyd, E. L.: Aplastic Anemia Due to Chloramphenicol, Antibiotics and Chemotherapy **2**: 1, 1952.

16. Wintrobe, M. M.: Clinical Hematology, ed. 3, Philadelphia, Lea and Febiger, 1951.

17. Council on Pharmacy and Chemistry: Toxic Effects of Technical Benzene Hexachloride and Its Principal Isomers, J. A. M. A. **147**: 571 (Oct. 6) 1951.

For five weeks the patient was observed and was given transfusions as necessary. This period was marked by recurrent epistaxes and temperature elevations to 104 F, which would persist for four to seven hours. Red tender areas 3 to 4 cm. in diameter would develop on various parts of the body. These would lose their tenderness and pass through the color changes of an ecchymosis. The search for a site of infection led to repeated blood and urine cultures, chest roentgenograms, and examination by an ear, nose, and throat consultant. No infection could be found. The sternal marrow aspiration on Nov. 5, 1951, showed few cells, but there was some increase in the proportion of cells of the myeloid series.

At no time did the clinical or hematological examination suggest a diagnosis of leukemia. The total and differential leukocyte count changed little; one to three nucleated red blood cells per 100 white cells appeared in the peripheral blood during November. On Nov. 21, 1951, treatment with cortisone, 200 mg. daily, was started. After 10 days of this therapy, she was discharged with instructions to continue on the same dose. The episodes of temperature elevation continued to recur during the last week in the hospital. Five weeks after discharge the patient returned for examination. She had continued to require transfusions, and had had a few epistaxes as well as one episode of hematuria. The cortisone dosage had been reduced to 100 mg. daily on Dec. 27, 1951.

On examination the patient showed signs of well-pronounced hypercorticism. There was a red tender area on the right arm similar to those described before and one ecchymosis. The hemoglobin level was 10.7 gm. per 100 cc. There were 5,950 white blood cells per cubic millimeter, with 1% myelocytes, 2% juveniles, 48% polymorphonuclears, 48% lymphocytes, and 1% monocytes. There were 16,000 thrombocytes per cubic millimeter. Sternal marrow aspiration revealed a normal number of cells, with normal distribution except for a slight shift to the left in the myeloid series. The patient continued to receive cortisone, 100 mg. daily until Feb. 1, 1952, when the dose was reduced to 75 mg. Four weeks later the evidence of cortical stimulation was less striking and the anemia was severe (the hemoglobin level was 5.5 gm. per 100 cc.). Ecchymoses were marked, and the thrombocytopenia and leukopenia were as pronounced as before. Cortisone therapy was stopped on March 8, 1952. The patient became progressively more ill. An intracranial hemorrhage developed, and the patient died on April 2, 1952.

COMMENT

We have described two fatal cases of aplastic anemia associated with chloramphenicol therapy, as well as one case in which this association was somewhat less clear. This last patient may possibly have been exposed to other substances of toxic potentiality. The first two patients had received no drugs other than chloramphenicol, with the exception of vitamins, acetylsalicylic acid (aspirin), antacids, and an autogenous vaccine, none of which has ever been seriously suspected as a cause of aplastic anemia.

The diagnosis of aplastic anemia in these cases is based on (1) the absence of splenomegaly, significant lymphadenopathy, or bony tenderness in the presence of pancytopenia; and (2) bone marrow aspirations, which yielded material with few nucleated cells, most of which were lymphocytes. At no time did careful blood and bone marrow examinations reveal any evidence of leukemia. In the first case, the appearance of severe hypoplasia in a surgical biopsy of the sternum added confirmatory evidence to the diagnosis of aplastic anemia. The findings in the spleen removed at operation in the same case were compatible with aplastic anemia. In all three cases, other investigations (such as roentgenographic studies, blood cultures, and urinanalyses) failed to reveal evidence of any other disease process that might be associated with these hematological findings. Consequently, even though no autopsies were performed in our cases, we believe that the diagnosis of aplastic anemia was correct.

In our patients, as in the one reported by Rich and associates,[14] there was no more than circumstantial evidence to incriminate the antibiotic. This is true of most substances that have been regarded as occasionally causing aplastic anemia.[18] No clinical or laboratory features distinguished our cases from cases of aplastic anemia due to other causes or from the idiopathic type. The presence of fever to 103 F or 104 F for long periods in our patients without any detectable cause is a possible exception to this statement.

If administration of chloramphenicol did have a causal relationship to development of aplastic anemia in our cases, and since the drug has been used widely without evidence of toxic effects being noted, consideration of the circumstances under which our patients received the antibiotic is of interest. In all three cases there had been some allergic manifestation. In the first, there was a history of chronic urticaria. In the second, a history of urticaria and of a skin rash following administration of penicillin and sulfonamides was obtained. In the third case there was a history of infantile eczema. In the second case an attempt to demonstrate the transfer to a normal person of skin-sensitizing antibodies to chloramphenicol was not successful.

TABLE 2.—*Bone Marrow Observations in Case 3*

	Findings on Aspiration Biopsy		
Date	10-17-51	11-5-51	1-12-52
Site	Sternum	Ilium	Ilium
General comment	Few cells	Few cells	Few cells
Reticulum cells	1.0%	0.3%	0.5%
Blast forms	0.5%	0.3%	.....
Promyelocytes	0.5%	2.6%	7.0%
Myelocytes	0.5%	4.6%	14.0%
Metamyelocytes	1.5%	6.3%	26.5%
Polymorphonuclears	0.5%	21.3%	14.5%
Lymphocytes	71.0%	45.3%	16.5%
Monocytes	.....	1.0%	1.5%
Plasmacytes	.....	.....	0.5%
Pronormoblasts	.....	0.3%	.....
Basophilic Normoblasts	1.0%	3.3%	.....
Polychromatophilic Normoblasts	16.0%	8.6%	14.0%
Orthochromatophilic Normoblasts	7.5%	5.6%	5.0%
Megakaryocytes	None seen	None seen	None seen

The unusual mode of administration of chloramphenicol to our patients is of interest. In the first two cases approximately 0.5 gm. daily was given for two weeks and one week, respectively. In the first case this was followed by administration of the drug for six day periods at monthly intervals for eight months. The last use of the drug preceding the development of the hemorrhagic manifestations followed four months later and consisted of administration of 0.25 gm. of chloramphenicol daily for approximately three weeks. In the second case a similar sequence of events occurred; approximately seven months after the initial therapy, sporadic doses of chloramphenicol were ingested. Finally, eight months after the initial therapy, some portion of 16 0.25 gm. capsules (a dosage which probably approximated the original therapy) was administered. Detailed analysis of the dosage

18. Wintrobe, M. M.; Stowell, A., and Roll, R. M.: Report of a Case of Aplastic Anemia Following Gold Injections in Which Recovery Occurred, Am. J. Med. Sc. **197**: 698, 1939.

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and time relationship of drug ingestion to the onset of symptoms in the third patient was not possible.

We are not aware of the experimental administration of chloramphenicol in this manner. Re-treatment of typhoid with chloramphenicol apparently produced no undesirable effects,[7] but this was not carried out on a comparable scale, that is, by administration of repeated small doses at intervals over a period of 8 to 12 months as in our cases. In the previously reported case of aplastic anemia following chloramphenicol administration [14] the antibiotic was taken on four different occasions for 13, 20, 34, and 11 days during a three month period prior to the appearance of hemorrhagic manifestations. The intervals between therapy in this case were two and three days. The dosage of chloramphenicol during these prolonged periods of administration was 0.5 to 0.75 gm. daily, with the exception of the first four days of the original administration. In reported cases of aplastic anemia associated with anticonvulsant therapy,[19] streptomycin,[20] quinacrine (atabrine®),[21] and sulfathiazole [22] therapy, administration had usually been continuous prior to the development of symptoms. Because chronic exposure to benzol or therapy with gold and arsenicals is usually intermittent, it is not possible to draw any conclusions relating the role of administration of these substances to the subsequent development of aplastic anemia. It may be pointed out, however, that there is no relationship between the size of the dose of an organic arsenical [16] or gold [18] preparation and the appearance of aplastic anemia. Certainly this statement is true of chloramphenicol, since very much greater amounts have been prescribed on some occasions than were received by our patients.[23]

THERAPEUTIC IMPLICATIONS

Even if the circumstantial evidence incriminating chloramphenicol as a cause of aplastic anemia should be accepted, it must be admitted, from the paucity of reports, that this complication is rare. Since chloramphenicol has been shown to be a very valuable drug for the treatment of a number of infections,[6] in our opinion there should be no question of withholding the drug when its use is justified. However, the evidence suggesting occasional toxicity should interdict the indiscriminate employment of this antibiotic in the absence of clear indications, and patients should be warned against its use as a household remedy without medical direction.

SUMMARY

Reports of anemia, granulocytopenia, and aplastic anemia ascribed to chloramphenicol have been collected from the literature. Three cases of fatal aplastic anemia that followed prolonged intermittent therapy with chloramphenicol are described. It is suggested that a history of allergic manifestations and the mode of administration of the chloramphenicol may have been predisposing factors in producing bone marrow aplasia. Chloramphenicol usage should be limited to infections that in themselves, or by their complications, endanger the life of the patient, and in which this antibiotic has been shown to be efficacious.

175 E. 21st South St. (Dr. Wintrobe).

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20. Sacks, M. S.; Bradford, G. T., and Spurling, C. L.: Aplastic Anemia Complicating Streptomycin Treatment of Pulmonary Tuberculosis; Report of a Case, with Recovery, J. A. M. A. **147**: 308 (Sept. 22) 1951. Womack, C. R., and Reiner, C. B.: Fatal Aplastic Anemia Due to Streptomycin: Case Report and Brief Review of Pertinent Literature, Ann. Int. Med. **34**: 759, 1951.

21. Custer, R. P.: Aplastic Anemia in Soldiers Treated with Atabrine (Quinacrine), Am. J. Med. Sc. **212**: 211, 1946.

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FATAL APLASTIC ANEMIA IN CHILDREN FOLLOWING CHLORAMPHENICOL (CHLOROMYCETIN®) THERAPY

REPORT OF FOUR CASES

Phillip Sturgeon, M.D., Los Angeles

The presence of the nitrobenzene radical in the structure of chloramphenicol (chloromycetin®)[1] led to the suspicion that the drug might be a hemopoietic toxin.[2] Clinical evidence tending to incriminate chloramphenicol as the responsible agent in instances of reversible leukopenia and/or anemia [3] and in one case of fatal aplastic anemia [4] has been reported. The purpose of this report is to add further evidence, obtained from the study of four cases of fatal aplastic anemia in children, indicating that chloramphenicol may be a serious toxin to the hemopoietic tissue of man.

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METHODS AND MATERIAL

The diagnostic criteria employed,[5] including the method of bone marrow aspiration, preparation, and analysis, have been described previously in detail.[6] Hemoglobin levels, Wintrobe hematocrit determinations, and white and red blood cell counts were done by routine methods. The dry method was used in counting the reticulocytes, and Fonio's technique was employed for the platelet counts.

Four patients who were admitted to the Los Angeles Children's Hospital from Feb. 2, 1950,[7] to Dec 12, 1951, and who subsequently died of aplastic anemia are described. All patients gave histories of previous chloramphenicol therapy. Three other cases of aplastic anemia

observed at the Children's Hospital during the past five years in which there was no history of chloramphenicol ingestion are discussed.[8]

CASE 1.—B. B. was first admitted at 22 months of age to Children's Hospital, Feb. 2, 1950. He had been well until six months previously, when he was admitted for one day to another hospital for treatment of diarrhea. At that time he was given 20 capsules of chloramphenicol. Pallor was noted four months later, at which time a blood count performed by the family physician revealed a hemoglobin level of 30%. A 300 ml. whole blood transfusion was administered, and 12 capsules of chloramphenicol were prescribed. During the following two months he had two attacks of severe tonsillitis that was treated with aureomycin on one occasion, and with a sulfonamide and penicillin on the other. The hemoglobin level following the transfusion was 68% but dropped to 36% in the succeeding two months.

A careful review of the patient's history relative to ingestion of drugs, obtained through the cooperation of the parents and the family physician, revealed the following: Several vitamin preparations and a boric acid (borofax®) skin ointment were used in early infancy. When the child was 9 months old, a cough medicine was prescribed, of which he took approximately 4 teaspoonfuls (16 cc.). This contained camphorated opium tincture (paregoric), 10 gm., sodium phenobarbital, 0.5 gm., and syrup of raspberry to make 120 cc. At 16 months of age the child had one injection of penicillin, a barium enema with x-ray studies of the bowel, and his first course of 20 capsules of chloramphenicol.

During the course of an upper respiratory infection, when the child was 20 months old, he took approximately 10 "cold pills" containing hyoscyamus, acetophenetidin, acetylsalicylic acid (aspirin), and gelsemium, and also three tablets containing phenobarbital and atropine sulfate. It was at that time that he also took 12 capsules of chloramphenicol, his second course. During his 21st month of life he received three capsules of aureomycin, a liver and iron preparation by mouth, two injections of a liver preparation, and one injection of vitamin B_{12}. There was no known exposure to organic solvents, dyes, or other recognized hemopoietic toxins.

Physical examination revealed a well-developed and well-nourished pale, irritable boy. The tonsils were enlarged. A loud blowing systolic murmur was audible over the left precordium. Abdominal examination revealed no abnormalities; the spleen was not palpable. There was no lymphadenopathy. Examination of the skin disclosed numerous petechiae scattered over the face, and old and new ecchymoses over the forehead. Results of the remainder of the examination were negative. Results of routine laboratory tests, including a tuberculin test, a Wassermann test and a urinalysis, were normal. Tables 1 and 2 summarize respectively the original blood and bone marrow findings obtained from the studies of this and the subsequent cases.

On his first admission to Children's Hospital the patient was given several whole blood transfusions, and then was discharged. Subsequently, over a 13 months' period, he was admitted to the hospital nine times, for transfusions and/or the treatment of tonsillitis. His general condition remained good; results of physical examination and laboratory tests, including bone marrow studies, were unchanged. Twenty-four hours following his last transfusion he suddenly died at home, with signs of a central nervous system hemorrhage. This fatal complication occurred 16 months after pallor, his first symptom of a blood dyscrasia, was noted.

CASE 2.—L. R. was first admitted to Children's Hospital Oct. 19, 1950, at 5½ years of age. Except for frequent attacks of tonsillitis, the child had been well all of her life until three months previously, when it was noted that she was bruising very easily. Two months before this and during the preceding year she had received courses of chloramphenicol for treatment of tonsillitis. One and one-half months prior to admission to this

TABLE 1.—*Summary of Hematological Findings*

Case No.	Date	RBC, Million/ Cu. Mm.	HGB, Gm./100 Ml.	Cell Volume, %	Reticulocytes, % of RBC	Platelets/ Cu. Mm.	WBC, Total/ Cu. Mm.	Differential		
								Granulocytes, %	Lymphocytes, %	Monocytes, %
1	2/ 2/50	1.88	6.1	17	0.6	9,000	2,500	23	62	15
2	10/19/50	1.47	4.4	15	...	.....	3,300	5	94	1
3	9/19/51	2.75	8.3	..	0.1	3,000	1,500	3	96	1
4	12/12/51	2.97	8.8	25	1.4	12,000	5,500	20	75	5

TABLE 2.—*Summary of Bone Marrow Findings*

		Case No.				Normal Values	
		1	2	3	4	Mean	Standard Deviation
Volumetric data	Fat, %	5.0	1.5	1.5	2.0	1.0	± 0.6
	Myeloid erythroid, %	0	0	0	1.5	4.0	± 1.5
Cytological data	Erythrocytes, %	11.0	2.2	1.0	50.2	21.4	± 8.5
	Granulocytes, %	21.4	3.6	1.0	22.8	51.5	±10.7
	Lymphocytes, %	58.4	90.3	96.2	19.8	20.5	± 6.2
	Monocytes, %	8.6	1.4	0.4	6.0	6.2	± 2.2
	Plasmacytes, %	0.4	2.5	1.4	1.0	0.4	± 0.3
	Tissue mast cells, %	0.2	0	0	0.2	0 *	.....
	Blast cells, %	0	0	0	0	0 *	.....
Histological data	Estimated cellularity, %	5	10	No particles recovered	40	45	35-80 †

* Have not been found in significant quantities in human bone marrow studied in this laboratory.
† Range.

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hospital she was seen at another hospital, where a diagnosis [9] of aplastic anemia was made, and she was treated with blood transfusions, folic acid, and vitamin B_{12}.

A review of the drugs administered to this patient during the preceding year revealed that, in addition to the chloramphenicol, she had been treated with penicillin and sulfonamides. She had also played with a toy printing set containing an inked stamp pad, and her father had employed turpentine and gasoline to thin lead and zinc-based paints used for painting about the house.

Physical examination revealed a well-developed and well-nourished girl, with numerous large ecchymoses scattered over the face, trunk, and extremities. There was clotted blood in the nostrils, and oozing of blood and ecchymotic spots over the oral mucosa. A soft systolic murmur was heard over the left precordium. A few small lymph nodes were palpable in the groin and axillas; there was no hepatosplenomegaly.

Results of laboratory tests, including a urinalysis sedimentation rate, were within normal limits; the hemoglobin level was 5.5 gm. per 100 ml. of blood. Other blood findings and the bone marrow studies are recorded in tables 1 and 2. On confirmation of the diagnosis of aplastic anemia, the patient was given one blood transfusion and discharged from the hospital. Several weeks later she was admitted to another hospital, where she subsequently died.

CASE 3.—A. E. was admitted to Children's Hospital Sept. 19, 1951, at 6½ years of age. A pinpoint red rash had appeared on the legs and spread to the face during the preceding week. Since early infancy the child's development had been noted to be slow, and at 9 months of age a diagnosis of mongolism was established. In addition to this difficulty the child had frequent upper respiratory infections and attacks of tonsillitis. A tonsillectomy was performed three months prior to the onset of his present illness. At that time the blood was "below normal levels."

A review of the drugs administered to this patient during the year preceding his current illness was obtained through the cooperation of the parents and the family physician. He had had five attacks of tonsillitis during the year; the first three were treated with penicillin and aureomycin. Chloramphenicol was included in the therapy of the last two attacks, which occurred six months and four months prior to the present illness. He had taken thyroid extract, one tablet daily; glutamic acid irregularly since two years of age; and "pituitary capsules," one daily for two months, four months prior to the present illness. No sulfonamide drugs, "headache remedies," or antihistaminic drugs were consumed during that period. An older brother used model airplane glues and "dopes"; there was no other exposure to organic solvents or dyes.

Physical examination revealed a 6-year-old child with obvious characteristics of mongolism; he was not acutely ill. A purpuric rash was densely scattered over the legs and sparsely scattered over the trunk and upper extremities. Several large ecchymoses were present on the legs. A minimal sanguinous postnasal drip was noted. A moderately loud systolic murmur was heard best in the third intercostal space at the left lateral sternal border. The liver and spleen were not palpable, and there was no lymphadenopathy.

Tables 1 and 2 record the results of the initial blood and bone marrow studies performed on this child. He was treated with numerous blood transfusions and penicillin but died on the eighth day of hospitalization of massive hemorrhage into the bowel.

CASE 4.—J. E. was first seen at Children's Hospital at 6 years of age on Dec. 12, 1951, complaining of epistaxis for six weeks and bruising for four days. Seven months prior to this he had pneumonia, which was treated with chloramphenicol, 1.5 gm. per day for four days. During the succeeding four months' interval, increasing pallor was noted, and he had several respiratory infections. Six weeks prior to entry into this hospital he was given 2 teaspoonfuls (8 cc.) of terramycin for a minor respiratory infection. During this illness he also took an antihistaminic agent for one day and some more chloramphenicol. Because of the pallor, a blood count was performed which showed "anemia." Following this, the child took an iron preparation, vitamin K, vitamin C, and rutin. Other than a multivitamin preparation the child had taken routinely, no other drugs were used. The use of "headache remedies" and the exposure to organic solvents or dyes was denied.

Physical examination revealed a well-developed and well-nourished large boy with slight pallor. Except for several old ecchymoses about the legs, the physical examination revealed no abnormalities. There was no lymphadenopathy, and the liver and spleen were not palpable. Results of routine laboratory tests, including a urinalysis sedimentation rate, Kahn and tuberculin tests, were negative. The initial hemoglobin level was 5.6 gm. per 100 ml. of blood. The rest of the blood count and bone marrow findings are listed in tables 1 and 2.

A diagnosis of aplastic anemia was made, and the treatment of the anemia with small transfusions of blood, and of the recurrent unexplained fevers with penicillin and terramycin was undertaken. He died on Feb. 12, 1952, two months following the onset of his illness. Gross postmortem findings revealed generalized bleeding into the viscera, including the lungs, kidney, gastrointestinal tract, and brain.

In the following three cases aplastic anemia was not associated with known exposure to chloramphenicol.

CASE 5.—J. D., a 13-year-old boy, was admitted to Children's Hospital Aug. 18, 1949, because of anemia. During the preceding year he had taken 25 to 50 mg., one to two times per day, of an antihistaminic drug (tripelennamine [pyribenzamine®] and/or prophenpyridamine [trimeton®]); an anterior pituitary extract (antuitrin®-growth), 500 units for 10 doses; and on two occasions, 0.5 grain (30 mg.) of thyroid extract daily for one month. The diagnosis of aplastic anemia was established; he died Sept. 16, 1949, of a cerebral hemorrhage.

CASE 6.—L. J., an 8-year-old girl, was admitted to Children's Hospital Jan. 28, 1950, because of bruising for one month. She had taken a sulfadiazine preparation for the therapy of a common cold 10 months previously, and had received 450 r of x-ray therapy to an enlarged anterior auricular lymph node at the same time. Three months prior to the onset of her illness she had had one injection of penicillin for treatment of a respiratory infection.

During her first hospital visit an infection manifested only by elevation of temperature was treated intensively for six days with penicillin, streptomycin, sulfonamides, and chloramphenicol, 2 gm. per day for three days. Following this, the child was admitted frequently during the subsequent year for blood transfusions, and on one occasion 450,000 units of penicillin were given for an attack of tonsillitis. She also received two doses of antihistaminic drugs (diphenhydramine [benadryl®] and tripelennamine). After January, 1951, she required no further transfusions, and her blood values returned to normal. When last seen Nov. 27, 1951, 10 months following her last transfusion, which was 23 months after the onset of her illness, a physical examination revealed no abnormalities. The hemoglobin level was 16.4 gm. per 100 ml.; there were 6,500 white blood cells and 105,000 platelets per cubic millimeter of blood; and the differential count was normal.

CASE 7.—J. R., a 6-year-old boy, died on his first admission to Children's Hospital Dec. 1, 1951. He had been followed since May, 1951, as a private outpatient for aplastic anemia, which had first manifested itself during January, 1951. He had been well all of his life, and during the preceding year had taken no antibiotic, sulfonamide, or antihistaminic drugs. There was no exposure to known hemopoietic toxins, but some volatile paint solvents had been employed by the mother and child to clean brushes used in oil and textile painting.

7. Chloramphenicol was first available commercially in small quantities in this community in January, 1949, and in larger quantities in April, 1949. The first patient encountered in this series received his initial doses of chloramphenicol in August, 1949; symptoms suggestive of a blood dyscrasia were noted in December, 1949.

8. Cases 1, 2, 5, and 6 in this report correspond respectively to cases 2, 4, 1, and 3 in a previous report dealing with the diagnosis of aplastic anemia in children.[5]

9. This diagnosis was established at that time by Dr. Gurth Carpenter. In a separate report by him dealing with aplastic anemias associated with chloramphenicol therapy, he will include her case with those of a group of adults.

COMMENT

Drugs other than chloramphenicol had been taken by all of the above patients. However, in the first four cases use of chloramphenicol was a common factor. The only other antibiotic used in four of the seven cases described was penicillin. It is of interest that in case 6 penicillin had been used during the course of the girl's disease to treat infections, and that she was the only child in this series to survive. It seems unlikely, therefore, that penicillin could be the responsible drug in this particular case.

In the first three cases, penicillin was also employed prior to the onset of aplastic anemia. From this standpoint alone, penicillin seems deserving of about three-fourths as much suspicion as chloramphenicol of being the etiological agent. Penicillin, however, has been used for a much longer time than chloramphenicol, yet modern text books of hematology do not list penicillin as a possible cause of aplastic anemia,[10] nor could any recent reports be found to this effect.

Antihistaminic agents [11] and streptomycin [12] have been incriminated as etiological agents in cases of aplastic anemia. None of the patients described in this series received streptomycin prior to the onset of his illness; however, one patient (case 5) received relatively large amounts of antihistaminic agents over a prolonged period. In view of similar cases reported elsewhere,[11b] it appears quite possible that his fatal illness was related to that class of drug.

In this series, therefore, it seems unreasonable to incriminate penicillin in any of the cases. In one case (case 5), tripelennamine can be logically suspected as the cause of the aplastic anemia. Thus, in two of the remaining six cases (cases 6 and 7) there is no obvious association of the aplastic anemia with drugs or antibiotics, but the original four have in common the history of chloramphenicol ingestion.

The widespread use of chloramphenicol is known. The possibility in this small number of cases is not remote, therefore, that it is pure coincidence that chloramphenicol was used prior to the onset of their aplastic anemias. There are, however, two additional pieces of evidence that should be considered before a decision is reached. In the first place, the chemical structure of chloramphenicol and its similarity to other known hemopoietic toxins is established [2]; secondly, others have reported instances of hemopoietic depression associated with administration of chloramphenicol. Rich [4] reported a fatal case of aplastic anemia in a patient during a prolonged course of therapy who three months earlier had received a sulfonamide preparation, penicillin, and aureomycin. However, subsequent to discontinuing these latter drugs, a blood count performed on the patient was found to be normal. It was only after three months of chloramphenicol therapy that an abnormality in the blood count appeared. Volini and associates [3a] have reported on three patients in whom reversible granulocytopenia developed during approximately two weeks of chloramphenicol therapy. To date there has been at least one other report associating chloramphenicol with toxic changes in the blood.[3b] The time of administration and the dose of the chloramphenicol in relation to the appearance of symptoms of a blood dyscrasia have been quite variable in the cases presented and in those cited from the literature. At first, this might seem to discount the possibility that chloramphenicol could be responsible for the hemopoietic changes. However, Wintrobe [10] mentions in his discussion of aplastic anemia secondary to benzole poisoning that the "evidence of poisoning may appear in a few weeks or only after many years of exposure, or it may not be discovered until the onset of infection long after exposure has ceased. Any degree of exposure is dangerous." Therefore, inasmuch as the exact mechanism of action of this class of drug is unknown, the variations in amount of drug to which these patients were exposed and in the time of administration to the onset of their symptoms does not preclude chloramphenicol as the etiological agent.

The therapeutic effectiveness of chloramphenicol in a wide variety of the infectious diseases was established shortly after its discovery. The chemical, physical, and antibiotic identity of the synthetic and natural product was also proved. However, at that time careful observations of a large number of patients treated with the antibiotic failed to show any significant changes in the red blood cells or the white blood cells attributable to therapy.[2] With regard to this failure to demonstrate clinical toxicity in large, well-controlled studies, the work of Kracke, published in 1933 on amidopyrine and other drugs that he classified in the benzamine series, is worthy of particular note. He brought out that the benzamine class of drugs (in which chloramphenicol can be placed by virtue of its nitrobenzene structure) was associated with an increasing incidence of granulocytopenia.[13] He also emphasized that it was necessary, inasmuch as only an occasional person who took this class of drug developed granulocytopenia, to presuppose the existence of a previously weakened, damaged, or idiosyncratic bone marrow that may be congenital or acquired. Today, in the case of chloramphenicol, the same situation may exist, and it appears reasonable to make the same supposition, that is, that thousands of people may take chloramphenicol indiscriminately and show no depression of the bone marrow, but in a very rare idiosyncratic person aplastic anemia may be expected to develop. It is therefore felt, despite the fact the evidence presented is only circumstantial, that the fatal cases of aplastic anemia described in this report are probably the result of human idiosyncrasy to chloramphenicol.

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SUMMARY AND CONCLUSIONS

Four instances of fatal aplastic anemia are reported in children who had on previous occasions received relatively small doses of chloramphenicol (chloromycetin®) for minor illnesses. Three other cases of aplastic anemia (two fatal, one with recovery) were observed over a greater time interval; in these there was no history of chloramphenicol therapy. It is pointed out that serious reactions in the former cases appear to be due to a human idiosyncrasy to chloramphenicol. It appears advisable, therefore, before prescribing chloramphenicol, to weigh carefully the relatively remote possibility of these serious hazards against the possible therapeutic advantages of this drug over other antibiotics not suspected of producing fatal toxic reactions.

ADDENDUM

Since completion of this manuscript, two additional cases of fatal aplastic anemia following chloramphenicol therapy have been observed at Children's Hospital. Details of one of these cases will be reported by Dr. Gurth Carpenter, who originally established the diagnosis. It is of interest to note that of the six patients seen to date in this clinic, three were physicians' children.

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SURGICAL TREATMENT OF VARICOSE VEINS

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The treatment of varicose veins as commonly practiced consists of high ligation of the internal saphenous vein and some obliteration of its main trunk and dilated tributaries by stripping and the injection of sclerosing solutions, either singly or in combination. While this is generally productive of early good results and proves adequate in some cases, it is followed by a high incidence of persistence and recurrence of the varicosities and excessive venous thrombosis. This is accounted for by the fact that the extent of the operation is too limited and the method of obliteration is poorly controlled, not definitive, and accompanied by undue risk of complications.

These observations were made on patients whom I treated by high ligation and injection prior to 1946,[1] as well as those treated by others. As a result thereof, the injection of sclerosing solutions was discontinued and the resection of the veins has been gradually extended to include the subfascial trunk and larger tributaries of the internal saphenous system in the thigh and leg and the external saphenous system from the knee to the ankle as a more or less routine procedure, as well as subfascial ligation of incompetent perforators when indicated.

To be most effective, the treatment should be based on the conception that varicosity of the veins is a progressive degenerative disease, affecting primarily, and more or less generally, the walls and valves of the superficial veins of the lower extremity. The venostasis with its sequelae of dermatitis, ulcer, and phlebitis is due to dilatation of the superficial veins and incompetent communicating veins with resultant sluggish flow and increased hydrostatic pressure in the superficial venous system. Treatment should be directed to interrupting the main paths of communication between the deep and the superficial systems and obliteration of the diseased superficial veins.

On account of the frequent anatomic variations and the friability of the veins, owing to the disease process, the operative method most effective is excision under visual and palpable control. Stripping is a relatively blind procedure and at best effects a removal of the subfascial trunk of the internal saphenous in the thigh and leg. It is relatively ineffectual in anatomic variations such as duplications and is not applicable to subcutaneous tributaries, which in some cases are of greater importance than the subfascial trunks. The injection of sclerosing solutions has no place in the treatment of varicose veins except possibly in the obliteration of residual, small, unsightly varices. With injection therapy, there is the danger of severe systemic reaction of allergic nature. The extent of the thrombosis cannot be controlled, and there may follow a fulminating thrombophlebitis of alarming degree with accompanying arteriospasm, resulting in damage to or even loss of the limb. The obliteration of incompetent communicating veins cannot be safely and consistently effected, and veins at one time satisfactorily occluded may become recanalized. Of greatest importance, the injected solution commonly finds its way into the deep veins, as indicated by the distribution of radiopaque dye used in making venograms, and may cause thrombosis, with resultant permanent damage.

The extent of the operation presents more of a problem. The value of the tourniquet tests is generally overrated. They indicate mainly the sites and degrees of retrograde flow only for the brief period after the patient changes from a prone to an upright position and the patency of the deeper veins in connection with brief exercises. They fail to give evidence concerning the dilatation that occurs on long standing. Valuable information as to dilated veins and incompetent perforators can be obtained by examination of a patient after he has been standing still for 10 minutes or longer. The degree of venostasis, as indicated by distention of the veins and edema, can best be determined by examination of the patient toward the end of a day of normal activity. Increased pigmentation and subcutaneous fibrosis indicate a long-standing process. Valuable information as to the adequacy of the deep venous return may be obtained when a firm supportive bandage, from the metacarpal region to the knee, is worn for a week or longer; this indicates what can be expected from treatment of the varicose veins.

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No treatment is indicated in conditions of mild degree, as the rate of progression cannot be predicted and any treatment of prophylactic value would require an operation more extensive than warranted by the presenting condition. In the average case of well-developed varicose veins, the treatment should consist of high ligation of the internal saphenous vein and excision of the subfascial trunks and the larger tributaries of both internal and external saphenous systems, as well as excision of any prominent varicosities of other origin.

EXTERNAL SAPHENOUS SYSTEM

Failure to recognize that the disease process is generalized and that the external saphenous system is commonly affected is a frequent cause of unsatisfactory results. To some extent, this is accounted for by the fact that in the popliteal region the main trunk of the external saphenous system lies under a firm layer of fascia, thus interfering with the recognition of pathological changes. Also, the external saphenous system is subject to many anatomic variations.[2] In some patients, it fails to communicate with the popliteal vein, while in others it does so only by a vessel of inconsequential size. It may empty into the internal saphenous system at any level or into a deep muscular vein in the medial or lateral aspect of the thigh. On the other hand, the internal saphenous system may empty freely into the external saphenous, resulting in a large trunk in the popliteal region. In some cases, the involvement of the external saphenous system is the predominant factor in the venostasis. It should be accorded the same treatment as the internal saphenous system. The only consistently satisfactory method of adequate obliteration is excision under visual and palpable control.

The foregoing treatment proves adequate in most cases. It can be carried out through a series of short horizontal incisions with no undue disfigurement from scarring. When executed properly, it is well controlled and practically devoid of major complications. Owing to the progressive nature of the disease, an operation of less extent is followed by a high incidence of persistent or recurrent conditions.

RECURRENCE DUE TO INCOMPETENT PERFORATING VEINS

In pronounced cases, and particularly in recurrent and persistent cases following the above procedure, incompetent perforating veins are generally important factors in the venostasis. While some of these are obliterated in the excision of the main saphenous trunks with the larger tributaries, there remain those connecting the deep veins with the secondary saphenous tributaries and those connecting the superficial veins with the muscular veins. They occur mostly in the leg but occasionally in the thigh. Their anatomic pattern and their treatment have been well described by Sherman.[3] These must be exposed by direct dissection and ligated at or preferably beneath the enveloping fascia, so as to include any accessory perforators. As the dissection must be carried along the fascial plane for a considerable area, one or more vertical incisions are necessary.

In this procedure, the number of incisions and the extensive subcutaneous dissection necessitate particular precautions against wound complications. The patient should be kept ambulatory, and this is best accomplished by operation on only one leg at a time. In cases of extensive involvement, the operations should be staged. Attempt should be made to control edema, dermatitis, and ulcer with preoperative treatment by pressure dressings, so that incision is made only through intact and relatively healthy skin. In case of persistent dermatitis or ulcer, the operation should be staged. Excessive fibrous tissue at the base of an ulcer or under the skin may require excision. After operation, the wounds are protected by a firm dressing of gauze and elastic adhesive from the toes to the groin, and this is not disturbed until the removal of the sutures, on about the 12th day. After this, the leg is supported from the toes to the knee with a boot, consisting of Unna's paste (30 gm. of zinc oxide and 60 gm. each of mucilage of acacia and glycerin) and elastic adhesive tape, until the skin is in good condition and there is no tendency to swelling. Antibiotics are administered the first few days after operation.

The purpose of the treatment of varicose veins is to provide an adequate venous return and avoid the crippling effects of venostasis. While disfigurement due to operative scars should be kept at a minimum, this is of secondary importance and should be so considered in planning treatment. In a few cases, the disease process is so extensive that it is difficult to prevent venostasis even with the most extensive and repeated operations. When pregnancy proves to be a particularly aggravating factor, sterilization is occasionally justifiable. For proper evaluation of the result of treatment, the patient should be examined by the physician making the survey, as little dependence can be placed on a written communication from a patient or from a physician not particularly interested in the subject.

While the foregoing remarks are concerned with primary varicosities, they are applicable in principle to secondary varices resulting from iliofemoral thrombophlebitis. However, in the latter group, the treatment may not be as satisfactory if there is the added factor of postphlebitic sequelae, such as obstruction of the deep veins, damage to their walls and valves, and vasospasm. These conditions demand special consideration, which is beyond the scope of this paper.

SUMMARY

The treatment of varicose veins by high ligation with stripping and the injection of sclerosing solutions, either singly or in combination, is followed by an excessive incidence of unsatisfactory results. The injection of sclerosing solutions has limited, if any, place in the treatment of varicose veins. The basic operation should consist of the excision of the subfascial trunks, the larger subcutaneous tributaries and any associated varicosities of the internal and the external saphenous systems and varicosities of other origin.

70 Hasell St. (8).

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SURVEY OF X-RAY EXPOSURES IN HOSPITAL PERSONNEL

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Considerable interest in the problem of proper protection for x-ray personnel has been advanced since the rules and regulations pertinent to the use of isotopes as outlined by the Atomic Energy Commission have become widely known. As of March, 1949, the permissible dosage rate [1] as recommended by the National Bureau of Standards was "the maximum total dose to which any part of the body of a person shali be permitted to be exposed continuously or intermittently in a given time. It shall be 0.300 r per week. On the basis of 48 hours per week of uniform exposure, the permissible dosage rates are: 0.00625 r per hour (6.25 mr per hour) . . . ."

TABLE 1.—*Data from Film Badges Worn Weekly or Biweekly for One Year in Seven General Hospitals*

No. of Beds	X-ray Unit	No. of Technicians Wearing Badges	No. of Physicians Wearing Badges	Weekly Exposures (Mr) Above Permissible Tolerance Dose
84	Diagnostic, therapy	4	1	90, 20, 110 *
84	Radiography, fluoroscopy	13	4	40, 50, 140, 340 †
215	Diagnostic, therapy	13	4	None
250	Diagnostic, therapy, cystoscopy	6	10	None
240	Therapy, radiography	8	2	None
324	Therapy, diagnostic	5	1	0.01 ‡
314	Diagnostic, fluoroscopy	8	1	500, 20 §

* Exposure received by physician.
† Exposure received by one physician.
‡ Approximate exposure received by one technician, who held two children; this practice has since been discontinued.
§ Approximate exposures received by two technicians.

In 1922 Pfahler,[2] in a study of the general health of radiologists, examined films worn by several hundred workers and observed darkening correlated to the erythema dose received by a worker. In 1926 Quimby [3] developed a method for estimating radium dosages in terms of skin erythema dose. A series of films exposed to known amounts of radiation were developed along with test films worn by workers over a definite period of time. The blackening of the films was measured in terms of density on a photoelectric photometer. From the known exposures and density, the amount of exposure on the test film was determined. Quimby suggested that similar methods for estimating x-ray dosages could be evolved.

In 1932 Failla,[4] in a paper on radium protection, pointed out that it was very important to have films exposed to the same quality of radiation as that received by the worker. Wilsey,[5] in his work on photographic photometry and x-rays, reiterated the importance of spectral sensitivity. In 1936 Bell [6] carried out experiments to show that a quantitative method for the measurement of x-ray intensities by the photographic action of x-rays could be developed. In 1947 Hoerlin and Hicks [7] presented spectral sensitivity data for three types of x-ray films and further pointed out the difference in photographic response of x-ray films to different qualities of radiation.

In 1949 Cowing and Spalding [8] established a series of curves for relating blackening expressed in terms of density as measured by a densitometer to roentgen values produced by exposure to radium and various qualities of x-ray. These curves form the basis of a film-monitoring program now being carried out in several hospitals. In 1950 Baker and Silverman [9] reported a method with the use of a combination of silver filters and lead shields incorporated in a badge for the identification of radiation of different energies and interpretation of mixed exposure. Wilsey's [10] work in 1950 on the use of various types of film for monitoring stray x-rays and gamma rays is a comprehensive treatment of the subject, in which he related roentgen rays to density; he presented data for use in film monitoring in diagnostic radiology, in 220 kv. therapy and 1,000 to 2,000 kv. x-rays or radium gamma rays.

It may be seen from the above résumé of work done on photographic film with ionizing radiations that a film-monitoring program could be set up and dosages received by x-ray department personnel thereby measured. A considerable number of x-ray departments in general hospitals now require personnel to wear film badges.

We have been fortunate in having at our disposal space and equipment for carrying out a film-monitoring program. Before the program was instituted, a research project was carried out to establish the technique of developing films and evaluating their blackening in terms of roentgens.[8]

Dupont dental film no. 552-2, which has been especially developed as an indicator for radiation, was selected for use in film badges. The packet consists of two films, the more sensitive having a range of 0 to 3 r and the least sensitive, a range of 0 to 20 r.

Series of film packets were exposed to known amounts of x-radiation. The x-ray intensities were first measured

Miss Florence Munson assisted in the preparation of data for this paper.

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with a Victoreen 25-r condenser type chamber. Since a point source gives off radiation that varies in intensity inversely with the square of the distance, film positions for various doses may be calculated. All film positions established by the inverse square law were checked with a minometer chamber.[10a] The films were next developed at a definite fixed temperature for a fixed time; fresh developer and sodium hyposulfite were used for each run. Along with each group of exposed film an unexposed film, serving as a control, was developed. Photographic graying and blackening of the films were measured on a photo cell type densitometer. The graying of the control film in terms of density units was subtracted from the density of the exposed films; density values were correlated with the known roentgen values and a density-roentgen curve established for the particular kilovoltage and filtration used. Since it is known that the photographic effect produced by radiation varies with the quality as well as the quantity of radiation,[11] a series of curves was established for various kilovoltages and with the amount of filtration commonly employed in x-ray work.

Such a set of standard curves is valid as a standard relating roentgen values to density only when the films worn by x-ray personnel are developed according to the same procedure as was followed in the establishment of the standard curves. It must be noted that an increase of only a few tenths of a degree in developing temperature will cause increased photographic blackening of the film, which will result in greater density. The indicated roentgen exposure would thus be greater than was actually received. A slight increase in developing time will also cause increased photographic blackening.

X-ray personnel in many hospitals wear film badges for a period of one week; in other departments the personnel wear the film badge for two weeks. These badges are usually worn on the lapel or outside of the laboratory coat or on the lead apron. Each film badge is numbered and is assigned to a worker. At the end of the week, the badges and a special form on which are the worker's name, badge number, and type of x-ray work (kilovoltage range) are returned to our laboratory.

The films are then developed and properly evaluated in terms of roentgens of exposure received by a worker. As in the establishment of the standard curves, a control film is always developed along with the used films, so that background may be subtracted from all density readings. Care must be taken to recognize factors other than radiation, which may fog or blacken film. Fumes, such as from illuminating gas, ether, ammonia, and formaldehyde, are known to blacken film.[8]

Because of the increased interest in the amount of overexposure received by technicians and radiologists in several hospitals and private offices, tables 1 and 2 are presented as a compilation of data accumulated over a period of one year. These data relate x-ray exposure to the type of work done by the technician or roentgenologist. It is believed that the figures presented in the tables show the over-all picture of the dosage received by members of x-ray departments in any hospital of comparable size. There have been no major structural changes in x-ray units that should cause any appreciable variation from these figures; neither have there been changes in technique.

It should not be inferred from the tables that it is unnecessary for a roentgenologist to wear a lead apron. It has been found in previous work that the maximum amount of radiation received by roentgenologists doing fluoroscopy without a lead apron is at waist level.[12] When a lead apron is worn, the locus of maximum dosage is usually on the right arm and shoulder. However, the data contained in the tables are obtained from one badge location, usually on the lapel. This area is partially protected.

TABLE 2.—*Data from Film Badges Worn Weekly for Varying Periods of Time*

Location	No. of Beds	Length of Time Badges Worn	X-ray Unit	No. of Technicians Wearing Badges	No. of Physicians Wearing Badges	Weekly Exposures Above Tolerance
General hospital	155	6 mo.	Therapy, diagnostic	5	1	40, 140 mr *
General hospital	226	2 mo.	Fluoroscopy, radiography, therapy	3	1	None
Roentgenologist's office	...	2 mo.	Therapy, diagnostic, fluoroscopy	4	1	None
Roentgenologist's office	...	3 wk.	Fluoroscopy	1	2	None
Insurance company	...	2 mo.	Fluoroscopy	2	0	None

* Exposures received by technicians.

COMMENT

It may be seen from the data presented (table 1) that, of 1,100 film badges worn by roentgenologists over a period of one year, seven films, or 0.63% showed exposures above the present permissible weekly tolerance (300 mr). Of 2,740 film badges worn by technicians over the same period, three films, or 0.11%, revealed overexposure. These figures are in good agreement with a previous nine-month survey [13] made by us, in which 11 of 2,655 films, or 0.41%, showed overexposure.

194 Pilgrim Rd. (Mr. Cowing).

8. Cowing, R. F., and Spalding, C. K.: Photographic Effect of Various Radiations on Special Dental Packets, Radiology **52**: 423, 1949.

9. Baker, R., and Silverman, L. B.: Improved Film Badge for Personnel Monitoring, Nucleonics **7**: 26, 1950.

10. Wilsey, R. B.: The Use of Photographic Films for Monitoring Stray X-rays and Gamma Rays, Radiology **56**: 229, 1951.

10a. The minometer is a fountain pen type of ionization chamber used with a separate charging and reading electrometer, manufactured by the Victoreen Instrument Company, Cleveland.

11. Failla,[4] Wilsey,[5] Hoerlin and Hicks,[7] Cowing and Spalding,[8] Baker and Silverman,[9] Wilsey,[10] Barkla, C. G., and Martyn, G. H.: Photographic Effects of X-ray and X-ray Spectra, Phil. Mag. **25**: 296, 1913.

12. Cowing, R. F., and Spalding, C. K.: A Survey of Scattered Radiation from Fluoroscopic Units in 15 Institutions, Radiology **53**: 569, 1949. Morgan, R. H.: Physical Problems of Fluoroscopy and Spot-Film Radiography, Radiology **52**: 786, 1949.

13. Spalding, C. K.; DeAmicis, E., and Cowing, R. F.: Radiation Exposure Survey of X-ray and Isotope Personnel, Nucleonics **5**: 63, 1949.

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HYPERTHERMIA (114 F RECTAL) WITH RECOVERY

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and
Alexander Brunschwig, M.D., New York

The maximal temperature rise in man from which there can be complete recovery is a question of both practical and theoretical interest, which perhaps, in the future, can be definitely answered on the basis of numerous well-documented reports. At present, a categorical statement concerning this is not possible. Undoubtedly, the duration of the hyperthermia is of great importance in survival. In the older literature, there are a number of fantastic reports of extreme hyperthermia, ranging from 120 to 170 F; it is obvious these are fradulent.

According to McNeal,[1] 114.8 F is the upper limit of hyperthermia that may be accepted as authentic without strong substantiating evidence. In his monograph on animal heat, Richet [2] listed 109 instances of hyperthermia, ranging from 107.6 to 112.2 F, with only 13 instances of survival, a survival incidence of about 11% for the group. Castellani and Chalmers,[3] under the classification "hyperpyrexial fevers," discuss instances encountered on the Gold Coast of Africa and in Ceylon in which the temperature reached 110 F, this being accompanied by delirium, then coma and death. DuBois [4] stated that in exceptional instances there has been survival after a temperature of 113 F. The following case report is an authentic instance of survival and complete recovery after a rise (albeit brief) in temperature to 114 F (rectally).

REPORT OF A CASE

G. L., a 56-year-old white woman, was first admitted to Memorial Hospital in May, 1951. In January, 1933, she had complained of a 15 lb. (6.8 kg.) weight loss during the previous six months; she was easily fatigued and noted enlargement of the abdomen. During exploratory laparotomy in another hospital, the macroscopic impression was that the patient had tuberculous peritonitis. An appendectomy was performed, and a nodule from the mesentery was excised for biopsy. The biopsy report was "omental implantation of cystadenoma." The patient was discharged a month later, after a stormy convalescence. There was a further weight loss of 31 lb. (14.1 kg.). (She now weighed 69 lb. [31.3 kg.]) In September, 1933, eight alternating doses of 8 to 16 minims (0.49 to 0.99 ml.) of Coley's toxin (an unfiltered mixture of killed erysipelas and prodigiosus cultures) were given by intra-abdominal injection. This caused temperature rises to 101 to 104 F. After this treatment, there was marked improvement; the abdomen decreased in diameter from 34½ in. (87.63 cm.) to 25¾ in. (65.41 cm.), during a four week period, and the patient's appetite became voracious. Eight injections of Coley's toxin were given, in October, 1933, and two injections were given in November. A hard, nodular mass, easily palpated, was found in the pelvis. Injections were given into the mass weekly during December, 1933, and January and February, 1934. In March, 1934, a second laparotomy was performed in another hospital. On macroscopic examination it was thought that the patient had extensive bilateral papillary adenocarcinoma of both ovaries, with metastases to the omentum, both broad ligaments, and over the surfaces of the liver. Hysterectomy and bilateral salpingo-oophorectomy and excision of metastatic masses were done. The histopathological diagnosis of papillary adenocarcinoma of both ovaries was then made. In June, 1934, injections of Coley's toxin were resumed and continued for a year. By December, 1934, the patient had gained 40 lb. (18.1 kg.).

In June, 1950, she complained of discomfort when sitting down. Pelvic examination revealed nodules, the size of grapes, in the rectovaginal septum. In April, 1951, the patient lost 10 lb. (4.5 kg.), and, on May 14, 1951, she entered Memorial Hospital. Pelvic examination revealed a mass 3 by 3 by 2 cm. in the right parametrium, and, with the examining finger in the rectum, a small cluster of nodules resembling a clump of grapes could be palpated in the cul-de-sac. These were thought to be recurrent nodules, and another course of injections of Coley's toxin was decided on. The patient received, on the day of admission, 1 minim (0.06 ml.) of this preparation. There was only a mild reaction, the temperature rising to 99.2 F; however, the patient vomited and had a headache. Thereafter, she received increasing doses, beginning with a daily dose of 2 minims (0.12 ml.), then 4 (0.25 ml.), 8 (0.49 ml.), 9 (0.55 ml.), 12 (0.74 ml.), 14 (0.86 ml.), 20 (1.23 ml.), and finally 22 minims (1.36 ml.) intravenously. The last mentioned amount resulted in a temperature rise to 103.4 F. On May 25, 1951, the patient received 24 minims (1.48 ml.) of Coley's toxin intravenously. An hour later, she had a severe chill that lasted 45 minutes. Two hours later, her temperature had risen to a level above the calibration of the rectal thermometer (later found to be 114 F). There was mental confusion, marked apprehension, facial congestion, and cardiac arrhythmia. Two other temperature readings were taken with two other thermometers, and similar readings were obtained.

Ice packs were placed about the patient. Intravenous infusion of 5% dextrose in isotonic sodium chloride was instituted, and her body was continuously sponged with cold water and alcohol. Sodium salicylate, 1 gm., was injected intravenously, and acetylsalicylic acid, 1.3 gm., was administered orally. Oxygen was administered by the nasal route. In 15 minutes, the rectal temperature had dropped to 104 F, the arrythmia had disappeared, dyspnea had subsided, cyanosis was less pronounced, apprehension had abated, and the patient fell asleep, apparently exhausted. The next day the patient appeared normal, and she had no later complaints.

Since the columns of mercury in three thermometers all rose above the calibrated segment, the levels they indicated were determined in the following manner. 1. The distance to which the mercury rose above the highest calibration in the thermometer, which was 110 F, equaled the distance from 106 to 110 F, and thus indicated 114 F. 2. A water bath was heated to 114 F in the laboratory, and a laboratory thermometer was used for this determination. A clinical thermometer that had not been shaken down and had been used on the patient was inserted into the bath, and the level of the mercury, presumably at the 114 F level, did not change. The water bath was then heated to 115 F, and the level of the mercury in the clinical thermometer rose.

Results of an electrocardiogram taken shortly after the rise and fall in temperature were normal. A complete blood cell count was taken shortly after the rise in temperature and a few hours after recovery. The hemoglobin level remained essentially unchanged, dropping from 12.5 to 12 gm. per 100 cc., and the leukocyte count rose from 6,200 to 21,700. On May 30, 1951, the patient was discharged, with no complaints. She was examined again in mid-July, 1951, and the masses in the cul-de-sac and right parametrium had increased in size slightly. The patient's general condition was satisfactory, and there were no abnormalities attributable to the hyperpyrexial episode.

From the Memorial Hospital Center for the Treatment of Cancer and Allied Diseases.

1. McNeal, W. J.: Hyperthermia, Genuine and Spurious, Arch. Int. Med. **64**: 800 (Oct.) 1939.

2. Richet, C.: La chaleur animale, Paris, Felix Alcan, 1889.

3. Castellani, A., and Chalmers, A. J.: Manual of Tropical Medicine, ed. 3, London, Baillière, Tindall & Cox, 1919.

4. DuBois, E. F.: Why Are Fever Temperatures Over 106 F. Rare? Am. J. M. Sc. **217**: 361 (April) 1949.

SUMMARY AND CONCLUSIONS

The history of a patient is reported in whom an extensive ovarian carcinoma was present 18 years ago. Much of this neoplasm was excised 17 years ago, at which time histological examination confirmed the diagnosis. The only other therapy consisted of injections of Coley's toxin. Irradiation therapy was never instituted. The patient remained asymptomatic, and the neoplasm was apparently inactive for 17 years. The neoplastic process recently became active again, and, in the course of intravenous injections of Coley's toxin, a precipitous rise in temperature to 114 F (rectal) was noted; this degree of hyperthermia was authenticated by laboratory control of the clinical thermometers employed. This is one of the highest rises in temperature authentically observed in man. It is believed that the brief duration of this hyperpyrexial state is the principal reason for the full recovery that ensued.

444 E. 68th St. (Dr. Brunschwig).

CLINICAL NOTES

DELIRIUM TREMENS TREATED WITH INTRAVENOUSLY ADMINISTERED CORTICOTROPIN (ACTH)

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Eunice M. Simmons, M.D.
and
Randle E. Pollard, M.D., Bronx, N. Y.

The treatment of delirium tremens, as advocated until recently,[1] consisted mainly of sedation and supportive measures. With the availability of corticotropin (ACTH) we now have a potent therapeutic agent that can effect a remission in an amazingly short time. Good results with divided intramuscular doses have been reported,[2] but the large total dose required has raised an objection to its use. Gordon [3] has reported that the action of corticotropin is enhanced as much as 20 times by its intravenous administration. The favorable use of small doses of corticotropin by this route has been shown by Mandel and others.[4] With this in mind, we recently had the opportunity to contrast the two methods of therapy.

REPORT OF CASES

CASE 1.—A 42-year-old white man was admitted to Fordham Hospital on Sept. 17, 1951, in a hyperactive state, with a marked alcoholic odor to his breath. He gave a history of alcoholism for the past five years, during which he consumed beer, whisky, and wine in varying amounts daily. His present illness began two weeks before admission, with steady imbibition of alcohol without food. There was some clouding of the sensorium, in that he could not remember the details surrounding his hospitalization.

The physical examination on admission revealed the patient to be well-developed, well-nourished, and dehydrated. He was nervous and agitated but answered questions somewhat rationally and coherently. His blood pressure was 138/98 mm. Hg, pulse rate 76, and rectal temperature 100 F (37.8 C). The head and neck examination revealed dry oral mucosa and coarse tremor of the tongue. The heart was normal in size, with sounds of good quality and with regular sinus rhythm. The lungs were clear throughout. The liver edge was palpated 2 cm. below the costal margin; otherwise the abdomen was normal. The extremities showed hyperactive deep tendon reflexes and coarse tremors bilaterally. No pathological reflexes were elicited.

Laboratory Data.—The white blood cell count numbered 3,800, with 67% neutrophils, 30% lymphocytes, and 3% monocytes. The Mazzini test and urinalysis were normal, and the erythrocyte sedimentation rate was 62 mm. per hour. Hemoglobin (electrocolorimeter method) was 14 gm. per 100 cc.

Hospital Course.—During the first hospital day the patient was sedated with paraldehyde. An adequate fluid intake was maintained orally, and large doses of vitamin B and B complex were administered intramuscularly. The patient continued to be hyperactive, and that night he showed evidence of auditory and visual hallucinations. On the second day the patient continued to be hyperactive, noisy, and delirious. Sedation, in the form of paraldehyde, and fluids were continued by oral administration. Parenterally administered vitamin therapy was also maintained. On the third hospital day the patient was completely irrational, and his hallucinations induced such violent struggles that restraints were necessary to prevent him from injuring himself. Paraldehyde sedation was continued. Orally administered fluids were augmented by 2,000 cc. of sodium chloride solution, with 5% glucose and vitamin B complex administered parenterally. In spite of this therapy, the delirium and struggles continued unabated, and the patient died 78 hours after admission.

CASE 2.—A 50-year-old white man was admitted to Fordham Hospital on Sept. 18, 1951. A history was not obtainable at that time. He was extremely undernourished and in an excited state, showing continuous jerking movements. He was completely disoriented as to time and place and appeared to have auditory and visual hallucinations.

His examination revealed a blood pressure of 140/90 mm. Hg, a regular pulse rate of 116, and a rectal temperature of 99 F (37.2 C). The head and neck examination showed dry mucosa, poor dental hygiene, and coarse tremor of the tongue. There was no nuchal rigidity. The chest examination showed his lungs to be resonant throughout, with breath sounds decreased in the right base. Percussion revealed no heart enlargement, and heart sounds were normal, with a regular sinus rhythm and no murmurs. The examination of the abdomen revealed the liver edge to be 2 cm. below the costal margin; it was not tender. No other abnormalities were noted in this region. Coarse tremors were found in the extremities; the deep tendon reflexes were hyperactive; and no pathological reflexes were elicited.

Laboratory Data.—The white blood cell count was 10,850, with a differential count of 70% neutrophils and 30% lymphocytes. Results of the Mazzini test and urinalysis were normal. Hemoglobin was 15 gm. per 100 cc. The erythrocyte sedimentation rate was 5 mm. per hour.

Hospital Course.—On the day of admission the patient was given sedation in the form of paraldehyde and phenobarbital. A sodium chloride and glucose solution containing 10 cc. of adrenal cortical extract (eschatin®) was given intravenously. During this first day the excitement stage continued, and restraints were necessary to prevent the patient from injuring himself. On the second hospital day the patient continued to be completely disoriented. Active auditory and visual hallucinations were evident and caused continuous motion and struggle. Sedation and parenterally administered fluids containing adrenal cortical extract were repeated in similar manner as on the first day, without any appreciable change in the patient's condition. On the third hospital day he declined rapidly, the rectal temperature rose to 102.4 F (39.1 C), and the pulse rate was 110, weak and thready. The patient was delirious, his speech was incoherent and unintelligible, and activity was constant and purposeless. He perspired profusely and collapsed, and his condition was

From the Medical Department, Fordham Hospital, Bronx, N. Y., Blase Pasquarelli, M.D., Director.

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2. Smith, J. J.: Endocrine Basis and Hormonal Therapy of Alcoholism, New York State J. Med. **50**: 1704 (July 15) 1950.
3. Gordon, E. S.: Adrenal Stimulation by Intravenous ACTH, read before the Central Society for Clinical Research, Chicago, Nov. 3, 1950; abstracted, J. Lab. & Clin. Med. **36**: 827 (Nov.) 1950.
4. Mandel, W., and others: Intravenous Use of Pituitary Adrenocorticotropic Hormone (ACTH), J. A. M. A. **146**: 546 (June 9) 1951.

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considered extremely grave. At this time all sedation was stopped. He was given 25 mg. of corticotropin in 1,000 cc. of 5% glucose in distilled water, intravenously, over a period of seven hours. The solution also contained 1,000 mg. of ascorbic acid. Another 2,000 cc. of fluid was given by hypodermoclysis. On the fourth hospital day, about 10 hours after the infusion of corticotropin, the temperature dropped to 101 F (38.3 C) and the pulse rate to 96 per minute. The patient remained disoriented but had occasional lucid moments; his speech was more coherent; and his movements were less constant and more purposeful. Another infusion of 25 mg. of corticotropin in glucose solution with ascorbic acid was administered intravenously over a period of 12 hours. Additional fluids were supplied by hypodermoclysis. By the fifth hospital day the patient's temperature had dropped to 100 F (37.8 C) and the pulse rate to 90 per minute. He was completely lucid and coherent, oriented, answered questions rationally, and was free of hallucinations. He sat up and asked for food and was able to retain food and fluid throughout the day. An examination showed only the persistence of the coarse tremors of the hands. Since that time he has remained completely in contact with his environment, and recovery has been uneventful.

A history was then obtained of his having been a beer drinker for 18 years, but that during the past six weeks he had consumed six to eight "shots" of whisky with two or three quarts of beer daily. Although he stated that he had eaten eggs and milk daily, his state of nutrition contradicted this. He had begun to vomit some days prior to arriving at the hospital.

COMMENT

One outstanding observation in both of these cases was the futility of attempted sedation. It was only after large doses of paraldehyde were administered that the patients were subdued for a short time. Persons in delirium tremens are suffering not only from the ravages of alcohol but also from marked nutritional deficiencies. A further depression of the metabolic processes by strong sedation can in no way contribute toward their recovery. In fact it tends to aggravate the confused mental state already present, which leads to further struggle and eventual exhaustion of the patient. It would seem that this occurred in these cases.

The use of supportive measures, such as parenterally administered fluids, electrolytes, glucose, warmth, bed rest, vitamin B and B complex, and adrenal cortical extract did not alter the clinical course in either case.

Corticotropin was not available for the first patient. The second patient received the corticotropin intravenously with dramatic response, passing from a moribund state to complete recovery in about 36 hours.

The purpose of this report is to emphasize both the rapid effect of corticotropin given intravenously and the adequacy of small doses by this route.

SUMMARY

Two cases of delirium tremens are reported, contrasting the old and the new methods of therapy of this extremely urgent illness.

870 Seventh Ave. (Dr. Fischbach).

Placenta Previa.—The older textbooks do state . . . that once placenta previa is diagnosed the pregnancy should be completed by "hook or crook." That practice is not followed, so far as I know, in any good teaching institution in this country at the present time. I don't know of any obstetricians who do that, either; we watch patients with reasonably certain placenta previa carefully until the time of viability is reached.—W. M. Allen, M.D., Bleeding During Pregnancy, *Postgraduate Medicine*, February, 1952.

RAPID BLOOD GROUPING AND Rh TYPING OF LARGE NUMBERS OF PERSONS

A CARD TECHNIC FURNISHING A PERMANENT RECORD OF THE ORIGINAL TESTS

William Thalhimer, M.D., Valhalla, N. Y.

Large amounts of blood, of known group and Rh type, to be used for transfusions, might be needed for the treatment of persons severely injured as a result of many kinds of disasters, e. g., fires, explosions, and wrecks. Even under conditions of civilian practice, sizeable amounts of blood are needed quickly to treat patients with burns, bleeding gastric ulcers, hemorrhage, and many other conditions. Therefore, it becomes increasingly important that one be prepared by knowing the blood group and Rh type of large numbers of persons who can be called on to furnish quickly the types of blood needed.

Efforts, in the past, to secure this information have been known as plans for "mass grouping." However, so many errors occurred in mass grouping, which can be eliminated today, that perhaps it would be better if this term were dropped. These former errors were usually caused by the use of inferior diagnostic serums, poor technic mainly by insufficiently trained helpers, and clerical errors. Today, slide tests and anti-A, anti-B, and anti Rh_0 (anti-D) diagnostic serums meeting the specifications of the National Institutes of Health are readily available and are so potent and specific that, with a proper technic, results with their use are thoroughly reliable.

There still remains the possibility of clerical errors in recording of the results of the tests. Also, it has been impossible to check on these errors, since the tests, whether performed in test tubes or on glass slides, are destroyed when, after each day's work, the glassware is washed. A method has been needed whereby the test itself can be preserved permanently, by a process of drying, so that the result of the test can be examined and checked at any future time and compared with the record made at the time the test is performed. These tests can be read at the end of each day by an expert, and misinterpretations by the inexperienced can be eliminated.

Allen, Diamond, and Madden [1] have recently described an excellent method for grouping large numbers of persons. They have described in detail not only a careful technic but also a plan for the entire setup and organization of a team for the systematic testing and handling of large numbers of persons in a minimum of time with a minimum number of trained technicians and secretarial helpers. They have pointed out where errors may creep in and have devised ways of reducing these. However, even with their excellent teamwork and with their well-trained and skilful workers, there were some

Aided by a grant from the Rosenstock Memorial Foundation.

From the Division of Pathology, Grasslands Hospital, and the Department of Laboratories and Research of Westchester County, Valhalla.

1. Allen, F. H., Jr.; Diamond, L. K., and Madden, H. J.: An Accurate Method for Rapid Blood Grouping of Large Numbers of People, New England J. Med. **244**: 925-930 (June 21) 1951.

technical and clerical errors. Although the total number of their errors was small, it is of interest that clerical errors accounted for one-third of the total number. It is difficult to conceive of a further reduction of these errors if any of the standard test tube or slide methods are used.

In all probability, it will never be possible to eliminate completely occasional technical errors in the performance of tests of the types required for blood grouping and Rh testing. In the usual, careful blood bank technic, there are routine checks that will discover errors in time. These checks are proving blood groups by testing individual serums for naturally occurring anti-A and anti-B isoagglutinins with suspensions of known A and known B cells. Cross matching tests will usually discover mistakes in ABO grouping of either the patient's blood or that of the prospective donor.

With large-scale grouping and Rh testing, reliance must be placed on doing and reading the tests correctly, since with present technics there is no way of preserving the tests themselves for a more expert observation and check later. An accurate and rapid method, which would

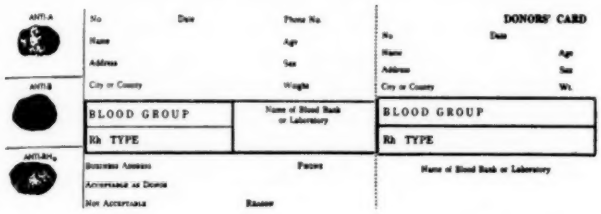

Fig. 1.—Card showing blood grouping and Rh testing and appearance of positive and negative reactions. This blood was group A, Rh_0 (D) positive.

give the results of the tests in the form of a permanent record, would apparently have a real value. In particular, such a method would allow for checking and correcting any clerical mistakes in recording the results.

In 1942 a method [2] was described for performing blood-grouping tests on cards with concentrated globulin fractions of pooled A or B serums secured from healthy donors. This test was found to be reliable; when the tests dried on the cards, the positive and negative reactions could be easily differentiated. The dried tests adhered firmly to the card, could not be rubbed off or easily scratched off, and gave a permanent record of the subject's blood group. This was before methods had been devised for stimulating donors to secure the excellent and potent blood-grouping serums easily available today. The present day serums work even better and quicker with the card technic than did the original globulin fractions.[3]

Excellent slide test anti-Rh_0 (anti-D) serum is available today, which gives completely reliable results when the tests are carried out on a warm viewing box that can be rocked from side to side. With these serums a method has been developed for performing grouping and Rh_0 typing on cards and drying the tests rapidly, thereby giving a permanent record. A number of technical details have been introduced that make for accuracy and speed, and it is recommended that they be followed carefully.

The tests are done on individual cards for each blood specimen, thereby eliminating the possibility of accidentally placing the blood in the wrong place when more than one test is performed on a slide or of splattering blood or diagnostic serum. A sample of the card being used is illustrated in figure 1, but this can be modified to

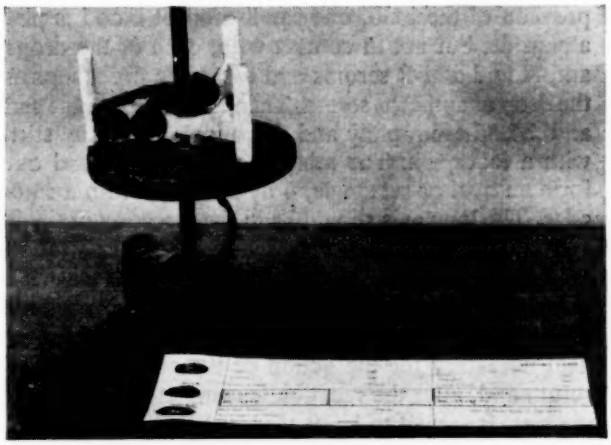

Fig. 2.—Electric hot plate and card beneath during performance of the test.

suit any program's special needs. It is important that the card be thick enough so that the moistening occurring during the test will not cause the card to buckle unevenly.

The cardboard [4] should be specially chosen to have a firm, smooth surface and to absorb moisture very slowly, so that the test can be completed before this occurs. Otherwise a ring will be left by the drop of blood when it is placed on the card. A firm, unabsorbing surface is also needed, to prevent fuzz being scraped into the test

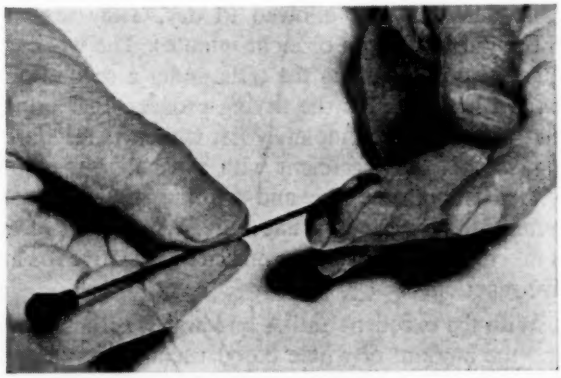

Fig. 3.—Long glass capillary tube, with small rubber bulb, being filled with blood after the finger has been pierced with a lancet.

area when blood and serum are stirred together with a toothpick. Toothpicks have been found to be better than wooden applicators.

2. Thalhimer, W., and Myron, S. A.: Globulin Fractions of A and B Agglutinating Serums for Blood Typing: A Rapid Card Technic Furnishing a Permanent Record, J. A. M. A. **118**: 370-372 (Jan. 31) 1942.

3. The card technic for ABO blood grouping has been used satisfactorily for years at the Blood Bank of Dade County (personal communication to the author from Dr. John Elliott).

4. Thick Springfield tag cardboard has been found satisfactory. Undoubtedly others are equally good.

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There are three rectangles on the card, labeled anti-A, anti-B, and anti-Rh_0 (anti-D). A large drop of the appropriate diagnostic serum is placed in each rectangle. After the finger is pierced with a lancet, a capillary glass tube with a small perforated rubber bulb [5] fitted on one end is filled with blood by capillarity. The perforation in the bulb is then covered with the index finger; by compression of the bulb, one small drop of blood is placed alongside, but not in contact with, each of the drops of anti-A and anti-B serums and two large drops alongside the drop of anti-Rh_0 serum. Then in each space the serum and blood are rapidly and thoroughly mixed by stirring with a toothpick. The mixture should be spread out to form an oval or rectangle, 4 by 2.5 cm.,[6] with a smooth edge. The long axis should be in the direction of the long side of the rectangle. Immediately after three tests are mixed, the card is placed under an inverted electric hot plate, which is elevated about 6 in. above the work table. The hot plate serves two purposes. It rapidly furnishes heat necessary for the action of the anti-Rh_0 (anti-D) serum and, after the reaction is completed, quickly dries the test. It is well to leave the card undisturbed for one minute, to allow the blood grouping tests (A, B, O) to go on to completion at room temperature. Then the card should be lifted and, while it is still being held under the hot plate, tilted slowly back and forth far enough to allow the blood serum mixture to run from one end of the oval to the other. This procedure is necessary to allow the agglutinates in the Rh_0 (D) positive bloods to become large. In the completed tests of Rh_0 (D) positive blood,[7] the pattern of large clumps with practically clear spaces between is very striking and cannot be mistaken for a negative reaction. The agglutination is usually clearly detectable in 15 to 30 seconds and the reaction complete in about two minutes.

The card is then replaced on the desk under the hot plate and the tests allowed to dry. They are usually entirely dry in seven or eight minutes. The work can be speeded up by placing the tests under a second or even a third hot plate for the drying process. It is important that the cards be completely flat while the tests are drying, so that the specimens with a negative reaction dry with a smooth surface and without any of the blood serum mixture piled up unevenly. When this precaution is taken, it is impossible to mistake a negative for a positive reaction.

With the excellent anti-A and anti-B serums available and the amount of whole blood used, the positive reactions will occur almost immediately after mixing, usually even before the card can be placed under the hot plate. Heavy mixtures of blood, or cells, have been found to react with anti-A or anti-B serums more quickly and with more clear-cut results than when small amounts of blood or cells are added to the diagnostic serums, as advocated by some workers.

When dried, the blood in all three tests is very dark brown, with a smooth, hard, permanent surface. The dyes added to commercial anti-A and anti-B serums (blue—anti-A and yellow anti-B) leave their identifying stain in the background of the dried blood smear, thus allowing a check that these serums were not reversed in the rectangles for ABO grouping. Tests performed in the past [1] with anti-A and anti-B globulin preparations remained unchanged when kept as long as six years. The card tests should be filed away in steel cabinets—proof against vermin that might eat off the dried blood and, of course, away from fumes. Present day plastic coating or clear shellac may be used to seal over the dried tests for further protection against moisture or accidental wetting.

One technician can place the drops of the three diagnostic serums in the labeled rectangles. The technician then pierces the donor's finger so as to obtain a large, free-flowing drop of blood, fills the capillary glass tube, places one or two drops of blood alongside each drop of serum, and mixes the blood and serum as directed. The card can be passed to a second technician, who places it under the hot plate and completes the test.

COMMENT

Blood specimens from 300 subjects have been tested by routine methods in the blood bank and with the card tests, and the results have been in complete agreement. The use of the glass capillary tubes for transferring the finger blood to the cards eliminates the chance of smearing blood into the other testing areas and gives drops of blood uniform in size. Also, the use of separate cards for each donor being tested removes the possible error of wrongly placing blood when blood specimens from as many as 10 persons are tested on one large glass plate or card. Clerical errors should be eradicated and, if suspected, can be checked by reexamination of the original dried tests.

Blood containing the D^u antigen may be missed by the anti-Rh_0 (anti-D) slide test serums usually available. Should it be desirable to test for D^u, the following method could be used. Since the above tests can be read accurately in two to three minutes, the donor can be held until these readings are made. Then a second sample of blood can be taken in a fresh capillary tube from all Rh_0 (D) negative donors. These samples could be tested subsequently for D^u by the indirect Coombs method.

This report is made now because it is believed that many laboratories will soon be called on to determine the blood group and Rh_0 (D) type of large numbers of persons. It is hoped that this method will be tried in large projects and its accuracy and utility investigated by others.

CONCLUSIONS

A rapid method with the use of a card technic is described for determination of the blood group and Rh_0 (D) type of large numbers of persons. The method yields a permanent record of these tests, which can be kept in a file and referred to at any time. Clerical errors should be eliminated or can be checked if they are suspected.

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5. The capillary glass tubes recommended are 1.5 to 2.0 mm. in outside diameter and 100 mm. long. They are considerably larger and longer than the capillary tubes usually used for hemoglobin determination by the specific gravity copper sulfate method. The tubes recommended deliver four large drops of blood. They can be obtained from the Glasco Products Co., 30 Rockefeller Plaza, New York. The small rubber bulbs can be obtained from the West Co., Philadelphia.

6. In a personal communication, Dr. John Elliott has suggested that the reaction is better and the clumps larger when the test is spread out over this large area.

7. Should further typing with an anti-Rh'_0 (anti-CD) serum be desirable, an additional square for this test may be added to the card.

TICK PARALYSIS

REPORT OF A CASE IN FLORIDA

Robert M. Alexander, M.D., Lake City, Fla.

Fatal involvement of the central nervous system due to the bite of a tick has long been recognized. However, a reminder at this time of the existence of the disease entity and its manifestations might be valuable.

Briefly, the history goes back to 1824, when Howell in Australia described "a small insect that buried itself into the flesh and caused the destruction of man or beast if not removed in time." In 1843 Backhouse described a tick that destroyed cattle and sheep after paralysis of the hindquarters had occurred. Bancroft, in 1844, described weakness of cats and dogs occurring two to three days after the attachment of ticks. Death followed unless the tick was removed. In 1904 Mally, in South Africa Cape Colony, reported paralysis of sheep following tick bites. Removal of the tick cured the sheep within a few hours. Temple and Todd, in 1912, described several human cases occurring in North America, and Cleland described a fatal human case in Australia, in which a tick had been removed shortly before death. The syndrome was produced experimentally in 1913 on young sheep with the use of adult female wood ticks, Dermacentor andersoni. No explanation of the mechanism was advanced at that time.

The disease has been reported in man in the northwestern and eastern seaboard regions of the United States, British Columbia, Australia, Yugoslavia, Crete, and South Africa. As far as can be determined this is the first case reported in Florida, although the disease is apparently known by word of mouth.

A general description of the syndrome follows: The vector, which may be the wood tick Dermacentor andersoni Stiles in the western United States or the dog tick Dermacentor variabilis Say in the eastern United States, often lodges on young female children, where its concealment in the longer hair allows sufficient time for the syndrome to develop. The tick usually feeds from 9 to 16 days and apparently releases a toxin that is at its height of potency around the fifth or sixth day. It has been found that the female ticks, which feed longer, usually release this toxin only in the gravid state. The toxin, which is neurotrophic, acts on the spinal cord and bulbar nuclei.

A typical description would be that of a young female child arising one morning noting some weakness of her legs and during the next 24 to 48 hours showing progressive loss of locomotion and ascending paralysis. The sphincters may or may not be involved; strangely enough, except for apprehension, the patient does not feel ill. There may be vertigo, numbness, and paresthesia, but cutaneous anesthesia is rare. The temperature is usually not elevated over 100 F until near the terminal stage. Occasionally there is vomiting, photophobia, and extreme restlessness. Respiratory distress may occur suddenly and unexpectedly and usually presages a fatal termination. Death may be preceded by convulsions and is due to respiratory failure. Ascending paralysis with bulbar involvement followed by death is the course unless the tick is found and removed. Usually, if the tick is removed before bulbar involvement, there is marked improvement within a few hours and recovery in two to seven days.

REPORT OF A CASE

On April 12, 1951, a 24-year-old white man was admitted to the Veterans Administration Hospital, Lake City, Fla. He stated that he had had an episode of influenza in December, 1950, from which he apparently recovered completely. Three weeks before admission to the hospital he had a minor upset, characterized by nausea, diarrhea, and weakness, which lasted a few days. He apparently recovered from this, and one week later he noted the sudden onset of pain in his lower back, which persisted for several days and then subsided. According to the patient, during the first week in April he noted the development of weakness of both arms, followed in 24 hours by severe weakness of both legs. He noted no tingling, numbness, or loss of sensation associated with this condition and no pain in any portion of his body. At the time of admission to the hospital he could move his fingers, feet, and toes slightly but could not lift his arms or legs. He had considerable difficulty in opening his mouth voluntarily and in swallowing.

His past history revealed that he was a fisherman in Florida and prior to the present illness had been on a fishing trip that involved going through the woods. It was learned that he and his dog had been bitten by a number of ticks during this expedition and that prior to his illness the dog, from whom a number of ticks had been removed, had paralysis of his hindlegs and died within two days. All ticks had been removed from the patient before admission. In other respects the past history was noncontributory.

On admission the patient appeared to be normally developed and nourished but anxious and acutely ill. He was unable to move about in bed, and he was having difficulty with mucus in his pharynx. Results of examination of the skull were negative. There was pain on anteflexion of the neck. The pupils reacted to light and accommodated normally. Funduscopic examination revealed a small white area about the left disk but no papilledema, hemorrhage, or exudates. Transient nystagmus to the right was present. The ears and nose were normal. The patient had difficulty in opening his mouth voluntarily, but it could be opened easily by the examiner. The posterior portion of the pharynx showed signs of irritation and trauma. There was no pharyngeal membrane present. The lungs were entirely clear to auscultation and percussion. The blood pressure was 140/90. The heart was normal except for tachycardia, 100 beats per minute. The upper extremities showed decreased tone; the lower were normal in tone. There was no edema and no limitation of motion of the joints. Neurological examination revealed an anxious, sweaty patient with flushed face. Sensorium was clear. Some nuchal rigidity and tenderness were noted. The deep tendon reflexes in the upper and lower extremities were markedly diminished. The urinary and rectal sphincters were normal. No changes in sensation to touch, pinprick, or vibration were noted. The position sense was preserved. The results of the remainder of the physical examination were within normal limits.

The blood cell count showed 5,500,000 red blood cells, with 18 gm. of hemoglobin, and 15,000 white blood cells with 83% polymorphonuclear cells, 12% lymphocytes, 4% monocytes, and 1% eosinophils. Urinalysis showed albumin 3+ and many hyaline casts. The serologic reaction of the blood was negative. A smear for malaria was negative. The spinal fluid examination showed normal pressure, 2 cells, sugar 89 mg. per 100 cc., total protein 35 mg. per 100 cc., negative complement fixation, and a negative gold curve.

Hospital Course and Treatment.—At the time of the patient's admission to the hospital his condition was far advanced, with paralysis of the four extremities and muscles of deglutition. He was fed by Levine tube. Atropine was used to reduce the secretions of the pharynx and bronchi. Phenobarbital sodium was used to combat his restlessness. He was given chloramphenicol,

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1 gm. three times a day, and dimercaprol injection, eight doses. Suction of the mucus from his oral pharynx was carried out as needed; despite this regimen, labored respirations and cyanosis developed, which did not respond to oxygen therapy. He died suddenly approximately 24 hours after admission to the hospital. Postmortem examination was not done.

SUMMARY

A case of tick paralysis in Florida with fatal termination is described. It is emphasized that the only treatment is the early removal of the offending ticks.

ANENCEPHALY IN FETUSES OF MOTHER WITH TETRALOGY OF FALLOT

NORMAL INFANT FOLLOWING BLALOCK OPERATION

Charles B. Olim, M.D.
and
Henry B. Turner, M.D., Memphis, Tenn.

A few congenital cardiac patients with the tetralogy of Fallot reach adult life. These persons are usually handicapped and lead restricted lives. Pregnancy in a patient so afflicted may be attended by serious consequences in both the mother and child. Black-Schaffer [1] reported an infant of dwarfed stature and marasmus born to a 26-year-old mother with cyanotic congenital heart disease. Talbot [2] believed that most congenital malformations that were the result of lack of embryonic development were not hereditary defects but were acquired in utero. He considered that these developmental defects were due to injury to the placenta during the early weeks of pregnancy, with maternal hematogenous infection of the placental blood vessels being responsible. Talbot described 20 consecutive cases of deformed babies in which there was evidence of placental damage near the base of the cord. Six of the 20 infants were anencephalic.

Ingalls and associates [3] in 1950 reported that they were able to produce fetal death and congenital defects in the mouse by subjecting pregnant mice to anoxia under controlled conditions. An inspissated plug, which appears in the vagina of the white mouse shortly after copulation, enables investigators to accurately determine the date of pregnancy. By producing anoxia in the animals on various days and for varying periods of time, Ingalls observed products of gestation ranging from small placental fragments, with or without absorbed fetal components, through gross fetal defects and monstrosities to normal appearing pups.

From the Department of Surgery and the Department of Obstetrics and Gynecology of the University of Tennessee College of Medicine.

1. Black-Schaffer, B.: Fetal Nanosomia and Bone Athrepsia in Newborn of Woman with Severe Cyanotic Cardiovascular Anomaly, Am. J. Obst. & Gynec. **59**: 656-661, 1950.
2. Talbot, J. E.: The Placental Infarct and Its Relation to the Etiology of Deformed Babies, Am. J. Obst. & Gynec. **8**: 271-288, 1924.
3. Ingalls, T. H.; Curley, F. J., and Prindle, R. A.: Anoxia as a Cause of Fetal Death and Congenital Defect in the Mouse, Am. J. Dis. Child. **80**: 34-45, 1950.
4. Stockard, C. R.: Development of Artificially Produced Cyclopean Fish: "The Magnesium Embryo," J. Exper. Zoöl. **6**: 285-338, 1909.
5. Warkany, J.: Manifestations of Prenatal Nutritional Deficiency in Vitamins and Hormones: Research and Applications, New York, Academic Press, Inc., 1945, vol. 3, p. 73.
6. Blalock, A., and Taussig, H. B.: Surgical Treatment of Malformations of the Heart in Which There Is Pulmonary Stenosis or Pulmonary Atresia, J. A. M. A. **128**: 189-202 (May 19) 1945.

The most interesting anomaly in the Ingalls series was anencephaly. This was found once in each of three litters of mice whose mothers had been exposed to anoxia on the eighth day of gestation. The probability that all three litters would contain such a monstrosity after a maternal insult on any particular day was less than 1 in 5,000. This suggested to Ingalls that anencephaly, like cyclopia in the fish [4] and cleft palate in the rat,[5] is stage specific in the sense that it arises only at some critical phase of cephalic development.

This case report concerns a young woman who had a congenital cyanotic cardiac abnormality, diagnosed as tetralogy of Fallot. Her course during three pregnancies is described.

REPORT OF CASE

Mrs. D. P., 18 years of age, was first seen in consultation on May 19, 1950. Three days before, she had delivered prematurely, at six and one-half months, an anencephalic fetus. She was extremely cyanotic, with clubbing of her fingers and toes. Discolored acneiform lesions were prominent on her face. The blood pressure was 120/70 mm. Hg. A soft systolic murmur was heard over the third left interspace in the midclavicular line. There apparently was no cardiac enlargement. The red blood cell count was 5,810,000, and hemoglobin, 16.2 gm. The electrocardiogram showed right axis deviation.

The patient's past history revealed cyanosis since birth, with dyspnea on moderate exertion. She frequently had to squat when tired, and stated that she could walk only about one-half block without resting. In 1948, at the age of 16, she had her first pregnancy, which terminated by abortion at six months, also with an anencephalic fetus.

On June 19, 1950, fluoroscopy and roentgenograms of the chest revealed a heart of normal size, with a slight convexity in the pulmonary conus and decreased vascular markings in the lung fields. The aorta descended on the left side. The final diagnosis at this time was congenital heart disease with tetralogy of Fallot. On July 6, 1950, operation was performed at the John Gaston Hospital. The left side of the chest was entered through the third intercostal space. The left pulmonary artery was short but of adequate diameter, and the pulmonary arterial pressure was obviously low. A Blalock procedure [6] was carried out, consisting of an anastomosis between the end of the subclavian artery and the side of the pulmonary artery. A satisfactory thrill was present at the anastomotic site when all clamps were removed.

The postoperative course was uneventful. A loud, continuous anastomotic murmur was present. The left lung reexpanded normally, and there was no collection of fluid in the pleural space. The patient's color improved immediately after operation, and, by the time of discharge, on the 14th postoperative day, her mucous membranes were pink. Her exercise tolerance increased steadily. Four months after operation her red blood cell count was 4,300,000, and hemoglobin, 12 gm. She stated that she was leading a normal life and was able to walk to town daily, a distance of two miles.

On Feb. 5, 1951, seven months after operation, the patient announced that she had missed one menstrual period. The last menses had begun on Dec. 23, 1950, and the estimated date of confinement was Sept. 30, 1951. She was referred to the maternity clinic of the John Gaston Hospital, where the diagnosis of pregnancy was confirmed. Pelvic measurements were within normal limits. A routine blood test and urinalysis were normal, but the Rh factor was found to be negative. The antepartum course was entirely uncomplicated, and at no time did she complain of dyspnea or other symptoms of cardiovascular strain. Blocking antibodies were first detected in dilutions of 1 to 4 on April 6, 1951. By the time of delivery the titer had risen to 1: 128.

On Sept. 21, 1951, during the 39th week of pregnancy, the patient was admitted to the hospital because of rupture of the membranes. Labor began spontaneously, and, after five and one-half hours, she was delivered by low forceps of a female infant under continuous caudal anesthesia. The baby weighed 5 lb. 15 oz. (2,693.2 gm.) and presented no congenital abnormalities.

The initial blood studies revealed hemoglobin of 15 gm., 2 nucleated red blood cells per 100 white blood cells, and a 3+ reaction to the Coombs test. The blood type was B, and the baby was Rh positive. On the second postpartum day jaundice was detected, but the liver and spleen were not palpable. The hemoglobin never fell below 12 gm., and, in spite of the jaundice, the baby fed well and gained weight.

After an uneventful postpartum course, the mother and infant were discharged from the hospital on the eighth day. When seen in the obstetric clinic six weeks after delivery, the patient had no complaints, and the physical findings were normal. The infant required one blood transfusion during the third week following delivery and then remained well.

COMMENT

The French scientist Geoffroy-Saint-Hilaire,[7] in a work on anomalies published in 1837, described anencephaly as an acquired arrest of cranial development. In 1877, Camille Dareste [8] reported the artificial production of monstrosities, including anencephaly in the chick embryo, as a result of thermal insults to the embryonated egg. In Ingalls' [3] experiments on white mice, the anencephalic monsters, fetal deaths, and lesser anomalies were interpreted as differences determined by the severity, not the kind, of maternal illness. In Ingalls' work the maternal insult was in the form of anoxic anoxia.

In our case one can surmise that the low arterial oxygen saturation of the mother's blood interfered with fetal nutrition during the cephalic phase of development, with the result that two anencephalic infants were born, each at approximately six months' gestation. Following a Blalock operation upon the mother, a more normal level of arterial oxygen saturation was achieved. The patient was then able to carry on normal activities without dyspnea or the appearance of cyanosis. Pregnancy at this time went to full term, and the patient, in an uneventful delivery, gave birth to a viable infant who suffered mild erythroblastosis but showed no evidence of congenital anomalies.

424 Physicians and Surgeons Bldg. (Dr. Olim).

7. Geoffroy-Saint-Hilaire, I.: Histoire générale et particulière des anomalies de l'organisation chez l'homme et les animaux, Paris, J.-B. Baillière, 1837.

8. Dareste, C.: Recherches sur la production artificielle des monstruosités ou essais de tératogénie expérimentale, Paris, C. Reinwald & Cie, 1877, p. 39.

Intestinal Obstruction.—The earliest roentgen sign of acute obstruction of the small intestine is a single loop of bowel distended with gas; this, with a clinical story of obstruction, in our opinion, gives the "green light" for immediate operation. A single loop obstruction is important from another aspect. It may mean that the blood supply to a segment of intestine is embarrassed if the normal anatomic markings are not clearly defined. The valvulae conniventes are present throughout the small intestine; they are more prominent in the upper part, being most pronounced in the jejunum. When gangrene occurs the bowel quickly loses tone and becomes edematous and blackened; its physiologic pattern rapidly disappears, and the bowel becomes a smooth-walled tube distended with gas. This is a pathognomonic roentgen sign of gangrene or embarrassment of blood supply. There is an additional sign of definite value in making the diagnosis of gangrene, a sign that has to do with the geometrical pattern of the intestine. Single or multiple "C-shaped" loops of small bowel arising from a common source or pedicle always indicate volvulus. This pattern is accompanied by loss of the valvulae conniventes, the extent of which is proportionate to the degree of embarrassment of the blood supply.—Ira H. Lockwood, M.D., Role of the Radiologist in Diagnosis and Management of Acute Obstruction of the Small Intestine, *The Journal of the International College of Surgeons,* May, 1952.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional preparations have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Diphtheria and Tetanus Toxoids-U.S.P. (See New and Nonofficial Remedies 1952, p. 388).

Eli Lilly & Company, Indianapolis

Combined Diphtheria-Tetanus: 1.5 cc. vials (one immunization) and 7.5 cc. vials (5 immunizations). Preserved with thimerosal 1:10,000.

Methyltestosterone-U.S.P. (See New and Nonofficial Remedies 1952, p. 368).

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Tablets Methyltestosterone: 10 mg. and 25 mg.

Penicillin for Oral or Sublingual Administration (See New and Nonofficial Remedies 1952, p. 122).

Rexall Drug Company, Los Angeles

Tablets Potassium Penicillin G (Buffered): 100,000 units. Buffered with 0.25 gm. of calcium carbonate.

Propylthiouracil-U.S.P. (See New and Nonofficial Remedies 1952, p. 408).

Rexall Drug Company, Los Angeles

Tablets Propylthiouracil: 50 mg.

Vinbarbital Sodium (See New and Nonofficial Remedies, 1952, p. 248).

Sharp & Dohme, Inc., Glenolden, Pa.

Elixir Delvinal Sodium: 3.78 liter bottles. A 33% alcohol elixir containing 8.33 mg. of vinbarbital sodium in each cubic centimeter.

Powder Delvinal Sodium: 15 gm. bottles. U. S. Patents 2,119,526 (expires June 7, 1955), 2,150,154 (expires March 14, 1956), 2,187,701 (expires Jan. 16, 1957), 2,187,703 (expires Jan. 16, 1957), and 2,222,455 (expires Nov. 19, 1957). U. S. Trademark 363,168.

Isopropylarterenol Hydrochloride (See New and Nonofficial Remedies 1952, p. 182).

Chemo Puro Manufacturing Corporation, Long Island City, N. Y.

Powder Isopropylarterenol Hydrochloride: Bulk; for manufacturing use.

Isopropylarterenol Sulfate (See New and Nonofficial Remedies 1952, p. 184).

Chemo Puro Manufacturing Corporation, Long Island City, N. Y.

Powder Isopropylarterenol Sulfate: Bulk; for manufacturing use.

Penicillin for Injection for Prompt Action (See New and Nonofficial Remedies 1952, p. 124).

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Potassium Penicillin G: 2,000,000 and 5,000,000 units in 20 cc. vials.

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SURGERY OF THE ADRENAL CORTEX

Surgery of the adrenal cortex is undergoing a rapid evolution, made possible by an increasing understanding during the past 30 years of the functions of the adrenal gland. The availability of adrenal cortical extracts and, more recently, cortisone, has reduced the danger of postoperative adrenal cortical insufficiency and has made feasible a wider application of adrenal surgery. However, many questions remain to be answered, and adrenal surgery is not to be undertaken lightly.

The major developments that have occurred in this field relate to diagnostic procedures for the assay of adrenal function, improved surgical technique, and methods of maintaining life in the presence of adrenal insufficiency or absence of the adrenal glands.

At least 28 steroids have been isolated from the adrenal cortex and their structures determined. The most important of these are desoxycorticosterone (DCA) and compounds A (11-dehydrocorticosterone), B (corticosterone), E (11-dehydro-17-hydroxycorticosterone), and F (17-hydroxycorticosterone). The physiological activity of the adrenal steroids in animals and in man is being intensively studied. It has become apparent that no single syndrome is characteristic of adrenal cortical overactivity. Rather, the clinical picture is variable and depends on the type and quantity of steroid hormones produced, age and sex of the patient, and, possibly, other factors. By estimating the activities of the adrenal steroids from a study of the hormone metabolites in the urine, it is now possible to differentiate with reasonable certainty between the causes of adrenal cortical dysfunction before surgery.

The availability of natural adrenal steroids and synthetic cortisone in larger quantities has brought within the scope of surgery cases of Cushing's syndrome without an adrenal tumor. Also, these substances administered preoperatively and postoperatively have greatly reduced the risk of adrenal insufficiency due to adrenalectomy performed for other causes.

Walters [1] recently reviewed developments in surgical technique at the Mayo Clinic. He had noted that a consistent feature of cases of functioning adrenal tumor is an atrophy of the gland on the opposite side. Therefore when an adrenal tumor is removed Walters leaves the opposite gland intact, whereas for hyperplasia he performs a bilateral subtotal adrenalectomy. The first step in the operative treatment of the hyperfunctioning adrenal gland, therefore, is to determine which is present, a tumor or hyperplasia. Previously Walters and his colleagues explored both glands before resecting either. They now base the procedure on the appearance of the first gland exposed. If it appears to be atrophic they explore the other gland with the probability of finding a tumor. If the first adrenal gland looks normal, 90% of it is resected without looking at the other adrenal gland. In patients with general hyperplasia but no tumor a total adrenalectomy is done several weeks later on the opposite side. Walters now does the second procedure without preliminary exposure of the remnant of the first gland to determine its viability. However, those less experienced would wish to check the viability of the remnant of the first gland before resecting the other.

Walters [1] recalls that, as a result of extensive studies, Kepler in 1934 had concluded that in "pituitary basophilism" the dominant part probably was taken by the adrenal gland even in cases in which basophilic tumors of the hypophysis were present. This led to Kepler's suggestion that, in cases of Cushing's syndrome without adrenal cortical tumor, bilateral adrenal resection be done. Walters in 1934 did such a resection, removing half of each adrenal gland. The results were not impressive. In 1951 Priestley, Walters, and their colleagues [2] reported the results of subtotal adrenalectomy for Cushing's syndrome in 29 patients in whom surgical exploration did not reveal a tumor. Six of the 29 patients died. These deaths all occurred prior to the use of cortisone in both preoperative and postoperative management. Four of the deaths occurred in the first 10 cases. Nineteen patients obtained an excellent remission, but three had recurrences of Cushing's syndrome. It is too early to draw final conclusions but the results to date are encouraging.

Based on observations of changes in blood pressure in Addison's disease (hypotension) and certain adrenal tumors (hypertension), adrenalectomy has been applied in certain cases of hypertension. Neuhof [3] observed a distinct reduction in blood pressure with relief of symptoms following bilateral partial adrenalectomy combined with sympathectomy in 13 patients with severe hypertension. Green and his group [4] reported the first case of total adrenalectomy adequately treated for malignant hypertension. Other studies in progress with hypertension are giving interesting results. An evaluation of these procedures in hypertension, however, is not yet possible.

The first successful total adrenalectomy in man was performed at the University of Chicago in 1945 for metastatic cancer of the prostate in a man who was in relapse following antiandrogenic therapy.[5] The rationale for total adrenalectomy in such cases is based on the fact that the adrenal cortex probably elaborates androgens in significant amounts. Several other cases of patients with prostatic carcinoma subjected to partial or total

1. Walters, W.: Surgical Treatment of Hyperfunctioning Lesions of the Adrenal Cortex, Lancet **1**: 221, 1952.
2. Priestley, J. T.; Sprague, R. G.; Walters, W., and Salassa, R. M.: Subtotal Adrenalectomy for Cushing's Syndrome: Preliminary Report of 29 Cases, Ann. Surg. **134**: 464, 1951.
3. Neuhof, H.: Gangliosympathectomy and Bilateral Hemiadrenalectomy for Severest Grade of Hypertension, Ann. Surg. **128**: 787, 1948.
4. Green, D. M.; Nelson, J. N.; Dodds, G. A., and Smalley, R. E.: Bilateral Adrenalectomy in Malignant Hypertension and Diabetes, J. A. M. A. **144**: 439 (Oct. 7) 1950.
5. Huggins, C., and Scott, W. W.: Bilateral Adrenalectomy in Prostatic Cancer: Clinical Features and Urinary Excretion of 17-Ketosteroids and Estrogen, Ann. Surg. **122**: 1031, 1945.

bilateral adrenalectomy have been reported. Although the remissions that have been obtained are encouraging, further observations with adrenalectomy in metastatic cancer of the prostate are required.

In conclusion, the removal of functioning adrenal tumors gives excellent results. The removal of nonmalignant adrenal glands is, however, still in the investigative phase. Conditions that have been benefited by adrenalectomy when no adrenal tumor was present are Cushing's syndrome, certain types of hypertension, and prostatic cancer.

Although it is now possible to prevent and sometimes to overcome adrenal insufficiency, the disadvantages of adrenalectomy, such as the possible development of Addison's disease and the necessity for long-continued hormonal replacement therapy, must be weighed against the possible benefits before adrenal surgery is undertaken.

OSTEITIS PUBIS

The first description of osteitis pubis, apparently a new clinical entity, was given by Edwin Beer in 1924. Beer's description has undergone little modification in recent papers. Muschat,[1] in 1945, reported 2 cases and found in the literature of the previous two decades only 23 cases. Cohen [2] reported on two cases in 1946 and was able to cull from literature a total of 33. Goldstein and Rubin [3] reported on 10 cases in 1947. Rosenberg and Vest,[4] in 1948, observed two cases occurring after a suprapubic prostatectomy and two after a transurethral resection. Beach [5] reported 7 cases in 1949, and Leucutia [6] reported on 4 cases of his own in 1951 and culled 116 cases from the existing literature. Of these cases, 83 fall in the short period since 1947. As a result of a questionnaire addressed by Mortensen [7] to his urologic colleagues in Australia and New Zealand 44 cases of osteitis pubis were reported; 7 were from his own practice. Lavalle and Hamm,[8] in the United States, reported four cases in 1951 and Marshall [9] three in 1952.

Osteitis pubis appears to occur only after surgical intervention on the lower urinary tract, most frequently after a suprapubic or retropubic prostatectomy and occasionally after a transurethral resection. The clinical course of this complication is quite characteristic. About three to eight weeks after a recovery from the operation, the patient experiences a sudden severe pain over the symphysis pubis, usually more pronounced on one side. Within a few hours or days the pain spreads down the rami and the ischia. The pain is now excruciating and is aggravated by spasms of the adductor muscles of the thigh provoked by the slightest movement. There may be discomfort and pain on defecation and urination. The temperature is only moderately elevated and may be normal at the peak of the disease.

About three weeks after the onset of pain roentgenograms show a fraying of periosteum and later a wooly or moth-eaten rarefaction of the affected portions of the bone. The destructive process is characterized by decalcification, which, however, does not lead to formation of sequestrums. The lytic process is accompanied by evidence of recalcification leading to a complete reossification and a complete restitution to normal, except for a somewhat sclerosed and narrowed symphysis.

Two theories attempt to explain the pathological etiology of osteitis pubis: the theory of aseptic necrosis of the type of Sudeck's atrophy and the inflammatory infectious theory. Cohen [2] stressed that, while clinically the condition simulated an infection, roentgenologically it simulated bone atrophy, as suggested by the absence of sequestrums, involucrum, or extensive sclerosis. The theory received support from Wheeler's animal experiments.[9a] He had failed to reproduce the disease in rabbits in whom he traumatized the space of Retzius, the periosteum, and the pubis and then introduced urine, cultures of bacteria, and foreign bodies under the periosteum. Sudeck's atrophy of bone is believed to be due to interference with the nerve supply to the blood vessels of the part, producing gross hyperemia and a consequent washing out of the calcium of the bones.

The infectious theory presupposed trauma to the periosteum of the os pubis or to its nutrient vessels and infection of the traumatized tissue. Beach [5] insisted that the condition is contingent on accumulation of urine or septic material behind the pubes, overspreading the nutrient foramina. The important factor was the injury to the prostatic capsule with septic spill.

Lavalle and Hamm [8] performed a biopsy on three patients with roentgenologically demonstrated osteitis pubis and an autopsy on a man with osteitis pubis who died 18 months later of another disease. Pseudomonas aeruginosa was cultivated from all the biopsy specimens. Histological examination of tissue revealed a subacute chronic inflammation involving the periosteum, bone, and cartilage. There were plasma cells and eosinophils in large numbers. The process suggested an infection of low virulence and of long standing. These authors concluded that osteitis pubis is a true inflammatory disease and not a sterile necrosis of bone as in Sudeck's atrophy.

Osteitis pubis is a self-limited disease with a favorable prognosis. A more or less complete cure takes place in from two months to as long as two years. Physiotherapy, immobilization, sulfonamides, and antibiotics are of little or no value. Goldstein and Rubin [3] and Leucutia [6] state that deep x-ray therapy is beneficial, though others deny this. Marshall and his co-workers [9] reported a dramatically prompt effect from corticotropin therapy and a limited effect in one chronic complicated case.

It is apparent from the review of literature that osteitis pubis is an increasingly common complication of operations on the lower urinary tract. The pathological etiology of the complication demands further study.

1. Muschat, M.: Osteitis Pubis Following Prostatectomy, J. Urol. **54**: 447-458 (Nov.) 1945.
2. Cohen, H. H.: Osteitis Pubis, J. Urol. **55**: 84-88 (Jan.) 1946.
3. Goldstein, A. E., and Rubin, S. W.: Osteitis Pubis Following Suprapubic Prostatectomy: Results with Deep Roentgen Therapy, Am. J. Surg. **74**: 480-487 (Oct.) 1947.
4. Rosenberg, M. L., and Vest, S. A.: Osteitis Pubis, J. Urol. **60**: 767-775 (Nov.) 1948.
5. Beach, E. W.: Osteitis Pubis: A Urologic and Roentgenographic Study, Urol. & Cutan. Rev. **53**: 577-584 (Oct.) 1949.
6. Leucutia, T.: Osteitis Pubis and Its Treatment by Roentgen Irradiation, Am. J. Roentgenol. **66**: 385-404 (Sept.) 1951.
7. Mortensen, H.: Osteitis Pubis, J. Urol. **66**: 412-417 (Sept.) 1951.
8. Lavalle, L. L., and Hamm, F. C.: Osteitis Pubis: Its Etiology and Pathology, J. Urol. **66**: 418-423 (Sept.) 1951.
9. Marshall, V. F., and others: Osteitis Pubis Treated with Adrenocorticotrophic Hormone, J. Urol. **67**: 364-369 (March) 1952.
9a. Wheeler, W. K.: Periostitis Pubes, J. Urol. **45**: 467 (March) 1941.

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ORGANIZATION SECTION

FEDERAL MEDICAL LEGISLATION

Federal Board of Hospitalization

Senator O'Conor of Maryland introduced S. 3314, which would establish a federal Board of Hospitalization, composed of 10 members. The President would appoint four members from private life who are persons learned in the medical arts. The other six members would be the Secretaries of Defense and Interior, the Veterans' Affairs and General Services administrators, the Director of the Bureau of the Budget, and the Surgeon General of the Public Health Service. It would be the duty of the board to make recommendations to the President respecting improvements in and better utilization of federal hospital facilities and personnel. They would seek to prevent overlapping and duplication of services and over-building of facilities. Such questions as need for existing or additional facilities and their location would also be fields in which recommendations would be made. The board would promulgate rules and regulations for efficient utilization of physicians, nurses, and related personnel for all federal facilities, except that such rules would not interfere with the established policies and practices of the Veterans Administration in the operation of VA facilities nor involve transfer of medical and hospital personnel from such agency unless such transfer has been approved by the reference committees of the Senate and House. This bill was introduced as a substitute for S. 1140, which proposed the creation of a federal Department of Health.

Federal Aid to Nurse Education

H. R. 8087, introduced by Congresswoman Bolton of Ohio, proposes to provide a program of emergency grants and scholarships for education in the field of nursing. Mrs. Bolton introduced this bill to replace her former bill, H. R. 910, on the same subject, which was reported unfavorably by the House Committee on Interstate and Foreign Commerce. The provisions of this measure limit the program to three years and place the control of the program in state boards of nurse examiners. Any state wishing to receive federal funds would submit a state plan, and, provided it met with certain minimum standards, it would be approved by the Surgeon General of the Public Health Service. Federal funds need not be matched by the states and would be used to assist schools of nursing in increasing enrollment of students and to meet the cost of improving and expanding their curriculums and to enlarge their staffs. Scholarship stipends would be awarded by the designated state agency and could cover cost of tuition, books, uniforms, equipment, and such amount for maintenance as set by the state agency. The bill would authorize 5 million dollars for the first year, 10 million for the second, and 15 million for the third and would be distributed among the states in the proportion that each state's newly enrolled trainees bear to the total national figure. There is no provision that would assist the states in construction of new schools or enlargement of those in existence, such as was contained in H. R. 910.

A second section of the bill provides federal assistance for a program of vocational education in practical nursing similar to the provision of H. R. 910. While no specific authorization for appropriations is provided, this section calls for a minimum allotment of $10,000 to each state. This program, at the federal level, is placed under the Commissioner of Education of the Federal Security Agency. At the state level State Boards of Vocational Education would direct the program.

Medical Expense Deductions from Income Tax

Representative Clemente of New York introduced H. R. 8148, which would increase the amount of deduction allowed, for income tax purposes, for medical and dental expenses. The present Internal Revenue laws provide that deduction may be made for medical expenses that exceed 5% of adjusted gross income. This bill would seek to increase such allowable deductions by removing any reference to the 5%, thus permitting taxpayers to begin deductions with the first dollar of medical expense each taxable year.

The summary of federal legislation was prepared by the Washington Office of the American Medical Association.

REGISTRATION AT THE ANNUAL SESSION, CHICAGO, JUNE 9-13, 1952

Alabama	78	Montana	30
Alaska	1	Nebraska	138
Arizona	45	Nevada	3
Arkansas	30	New Hampshire	12
California	551	New Jersey	134
Canal Zone	2	New Mexico	15
Colorado	101	New York	566
Connecticut	58	North Carolina	47
Delaware	12	North Dakota	31
District of Columbia	185	Ohio	467
Florida	131	Oklahoma	75
Georgia	67	Oregon	62
Hawaii	19	Pennsylvania	364
Idaho	18	Puerto Rico	7
Illinois	1,641	Rhode Island	19
Chicago	2,833	South Carolina	38
Indiana	594	South Dakota	48
Iowa	242	Tennessee	116
Kansas	75	Texas	237
Kentucky	117	Utah	37
Louisiana	78	Vermont	4
Maine	7	Virginia	70
Maryland	104	Washington	110
Massachusetts	150	West Virginia	53
Michigan	514	Wisconsin	584
Minnesota	229	Wyoming	11
Mississippi	34		
Missouri	269	Total	11,485

OTHER COUNTRIES

Africa	2	Israel	7
Argentine	4	Italy	2
Australia	2	Japan	2
Bahamas	1	Mexico	13
Belgium	4	New Brunswick	1
Brazil	6	New Zealand	1
Canada	70	Norway	1
Chile	1	Nova Scotia	2
China	2	Pakistan	5
Colombia	4	Peru	5
Cuba	34	Philippines	4
Denmark	2	Scotland	1
England	11	Siam	5
Finland	1	Sweden	6
Formosa	1	Switzerland	1
France	4	Uruguay	2
Germany	4	Venezuela	2
Greece	6		
Guatemala	5	Total	231
Holland	2		11,485
India	2		231
Iran	2		
Ireland	1	Grand Total	11,716

REGISTRATION BY SECTIONS

Anesthesiology	241
Dermatology & Syphilology	244
Diseases of the Chest	327
Experimental Medicine & Therapeutics	71
Gastro-Enterology & Proctology	245
General Practice	2,399
Internal Medicine	1,793
Laryngology, Otology & Rhinology	235
Military Medicine	62
Nervous & Mental Diseases	399
Obstetrics & Gynecology	728
Ophthalmology	365
Orthopedic Surgery	268
Pathology & Physiology	213
Pediatrics	356
Physical Medicine & Rehabilitation	93
Preventive & Internal Medicine & Public Health	284
Radiology	373
Surgery, General & Abdominal	1,511
Urology	240
Session on Allergy	60
More than one Section checked	157
No Section checked	1,052
Total	11,716

PROCEEDINGS OF THE CHICAGO SESSION

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL SESSION IN CHICAGO, ILL., JUNE 9-13, 1952

(Continued from page 875)

Resolution on Negro Physicians in North Carolina

Dr. Millard D. Hill, North Carolina, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The members of the Medical Society of the State of North Carolina are anxious to maintain the cordial relations existing between the white and Negro physicians in North Carolina; and

WHEREAS, They recognize the advantages to the Negro physicians of membership in the American Medical Association; and

WHEREAS, At present it is not feasible, because of limits of space in the hotels of North Carolina, and also because of existing custom, to attempt to have joint meetings of both groups; and

WHEREAS, The Old North State Medical Society, which for fifty-three years has been the state organization of Negro physicians, has asked to be admitted "as a constituent association of the American Medical Association"; and

WHEREAS, The House of Delegates of the Medical Society of the State of North Carolina, at its annual meeting in May 1951, voted to approve this request and sponsor the Old North State Medical Society as a constituent of the American Medical Association; therefore be it

Resolved, That the House of Delegates of the American Medical Association approve the recognition of the Old North State Medical Society as an affiliate of the Medical Society of the State of North Carolina, and also of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee feels that great progress has been made in the assimilation of Negro doctors into organized medicine and many societies have adopted a policy of inviting Negro doctors to attend their scientific meetings with commendable success. Due to a question of constitutionality and to the fact that the Old North State Medical Society is composed of physicians, dentists and pharmacists, we recommend that the resolution be referred to the Board of Trustees.

Resolutions on Outstanding Action by Dr. Walter H. Roehll

Dr. William Weston, South Carolina, introduced the following resolutions, which were reported on by the Reference Committee on Hygiene and Public Health:

WHEREAS, Dr. Walter H. Roehll was a passenger on a train which was stalled for several days in a heavy snowstorm in the Sierras; and

WHEREAS, Dr. Roehll showed untiring zeal far beyond the call of duty in administering to those of his fellow passengers who needed medical care; and

WHEREAS, Dr. Roehll's actions were widely disseminated in the public press but have never been acknowledged by his professional colleagues; therefore be it

Resolved, That this House of Delegates express its appreciation and approval of Dr. Roehll's service and also its desire that this sentiment be noted in the official record; and be it further

Resolved, That a copy of this resolution be sent by the Secretary to Dr. Roehll and to the officials of the Southern Pacific Railroad.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which, after discussion, was adopted:

With respect to the resolutions in regard to Dr. Roehll, your reference committee recommends their adoption.

Resolutions on Permanent Records of Judicial Council

Dr. A. C. Scott, Texas, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The Judicial Council of the American Medical Association is the court of last resort in all matters of medical ethics and rules, the actions taken by this Council are vitally important to all members of the Association as well as to the constituent societies; and

WHEREAS, Rulings, actions and interpretations of the Judicial Council are so important for purposes of guidance that they should be available for study by county and state societies; and

WHEREAS, Permanent records of these actions should be maintained in the office of the Secretary of the American Medical Association; therefore be it

Resolved, That the House of Delegates request the Board of Trustees to take the necessary action to see that permanent bound records of all actions of the Judicial Council be maintained in the office of the Secretary of the American Medical Association for guidance of constituent societies seeking precedence and interpretation; and be it further

Resolved, That such rulings and interpretations of the Judicial Council as would be helpful to the membership of the American Medical Association at large be made available to them through THE JOURNAL of the American Medical Association at the discretion of the Editor.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends approval of the resolutions as presented.

Resolution on Badges for Alternate Delegates

Dr. Hoyt B. Woolley, Idaho, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Alternate delegates to the American Medical Association are not provided a distinguishing badge; and

WHEREAS, The absence of a badge makes identification difficult; and

WHEREAS, Many of the alternate delegates come great distances to attend the American Medical Association; now therefore be it

Resolved, That the House of Delegates request the Board of Trustees of the American Medical Association to provide suitable identification badges for the alternate delegates to the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends approval of this resolution as presented.

Resolution on Reevaluation of Principles of Medical Ethics

Dr. George Turner, Texas, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, There are wide differences of opinion among the members and constituent societies concerning interpretation of the present statement of the Principles of Medical Ethics; and

WHEREAS, It is desirable that the Principles of Medical Ethics be studied and reevaluated in order to clarify misunderstandings among members of the Association; and

WHEREAS, The Council on Constitution and By-Laws is the proper Council to consider changes in the Constitution and By-Laws governing the membership and operation of this Association; and

WHEREAS, It is felt that the Principles of Medical Ethics should be given the same careful consideration by this Council that it gives to changes in the Constitution and By-Laws; therefore be it

Resolved, That the House of Delegates request the Council on Constitution and By-Laws to study and evaluate the present Principles of Medical Ethics and report back to the House of Delegates its recommendations.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, submitted the following report, which was adopted:

Your committee recommends that the House of Delegates request the Council on Constitution and By-Laws to study and evaluate the present Principles of Medical Ethics and report back to the House of Delegates its recommendations.

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Resolutions on International Labor Organization Attempt to Socialize Medicine

Dr. J. Stanley Kenney, New York, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The International Labor Organization composed of representatives of government, management and labor, in June, 1952, is expected to consider "Minimum Standards of Social Security" including medical care; and

WHEREAS, It is expected that an "Expert Committee on Medical Care in Social Security," appointed by the World Health Organization, which committee does not contain any practicing physician and is believed to have made no attempt to obtain opinions of the practicing medical profession and which it is expected will recommend full time salaried medical service in the countries which are members of the International Labor Organization; and

WHEREAS, A "convention," having the status of an international treaty is expected to recommend this type of medical practice through the President of the United States of America to the Senate; and

WHEREAS, Adoption of such a scheme would consign the United States of America to full time salaried medical service for all of its people, in other words, socialized medicine; now therefore be it

Resolved, That this House of Delegates of the American Medical Association disapproves of full time salaried governmental medical service for the people of the United States of America; and be it further

Resolved, That the Secretary of the American Medical Association is hereby instructed to transmit a copy of this resolution to the President and members of the Senate of the United States of America; and also be it further

Resolved, That the Board of Trustees of the American Medical Association is hereby instructed actively to oppose this expected attempt to socialize medical practice in our country.

Report of Reference Committee on Legislation and Public Relations

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

The resolutions introduced by Dr. J. Stanley Kenney on behalf of the Medical Society of the State of New York, condemning the attempt of the International Labor Organization to socialize medicine by means of an "international convention," are, in the opinion of your committee, both timely and vital, and we recommend their adoption.

Resolution on Restriction of Membership in the American Medical Association

Dr. H. H. Bauckus, New York, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, In 1950 the House of Delegates of the American Medical Association passed the following resolution:

"WHEREAS, This House of Delegates recognizes that certain constituent and component societies of the American Medical Association have had or now have restrictive provisions as to qualifications of membership based on race and that this question is of deep concern to many interested parties; and

"WHEREAS, It is the policy of the American Medical Association to broaden the scope of educational facilities and raise the ethical levels of practice of all physicians in order to improve the quality of medical care for the American people; therefore be it

"*Resolved*, That these facts be brought to the attention of all component and constituent societies, appreciating that membership is a component and constituent society responsibility; and be it further

"*Resolved*, That constituent and component societies having restrictive membership provisions based on race study this question in the light of prevailing conditions with a view to taking such steps as they may elect to eliminate such restrictive provisions"; and

WHEREAS, Distinctly encouraging progress has been noted in the favorable policy toward admission of Negro physicians to membership in county medical societies in Maryland, Missouri, Florida, District of Columbia, Oklahoma, Virginia, and Delaware; and

WHEREAS, Study and partial adoption of this policy are now under way in North Carolina, South Carolina, Tennessee, Texas, Kentucky, and Arkansas; therefore be it

Resolved, That this House of Delegates of the American Medical Association in June, 1952, reiterate its above-quoted resolution of 1950 and request the Secretary of the American Medical Association to send a copy of this resolution to each constituent association and society, to the end that all men and women professionally qualified shall be eligible for membership in the American Medical Association and its component and constituent associations and societies without regard to race, color or creed.

Report of Reference Committee on Miscellaneous Business

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee notes that since the action of the House of Delegates at the 1950 meeting in San Francisco, laudable progress has been made removing restrictions on membership in many county and state societies. Your committee is encouraged by this report of progress as expressed to it in its deliberations. Your committee recommends approval of this resolution

Resolutions on Reed-Keogh Bills

Dr. W. P. Anderton, New York, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The House of Representatives of the United States has been considering H.R. 4371 and H.R. 4373, known as the Reed-Keogh bills; and

WHEREAS, These bills would enable citizens of the United States of America practicing in the professions and certain others who are self-employed to provide for old age through the establishment of retirement plans as accepted in industry; now therefore be it

Resolved, That the Trustees of the American Medical Association are hereby commended for their efforts to obtain passage of such legislation; and be it further

Resolved, That the Board of Trustees is hereby importuned to continue these efforts through every avenue at its disposal.

Report of Reference Committee on Legislation and Public Relations

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

The resolutions introduced by Dr. W. P. Anderton regarding the Reed-Keogh bills were given due consideration. Your committee heartily approves of the resolutions and recommends their adoption.

Resolutions on Appointment of Health Commission of the American Medical Association

Dr. Russel V. Lee, Section on Military Medicine, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, To implement more completely the primary objective of the American Medical Association, which is properly the advancement of the state of health of the Nation and of humanity; and

WHEREAS, To establish effective liaison with others who are also vitally interested in this matter; therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby authorize and request the Board of Trustees of the American Medical Association to constitute a body to be known as the Health Commission of the American Medical Association; and be it further

Resolved, That this body shall consist of physicians representing general practice, the principal specialties, group practice, medical education, research, together with invited lay representatives of the general public, of big and little business, of organized and unorganized labor, of farmers, educators and such others and to such numbers as the Board of Trustees deems appropriate; and be it further

Resolved, That the functions of this commission shall be to study and make recommendations on all matters that affect the health care of individuals and groups, but particularly such sociological and economic problems as have relevance to health matters, to hold such meetings and public hearings as it finds useful, to establish subcommittees and special study groups when needed, and to submit a report, if possible with recommendations, each year to the House of Delegates of the American Medical Association; and be it further

Resolved, That this commission be furnished with such funds as the Board of Trustees finds necessary and feasible and furthermore be authorized to receive additional funds from individuals, corporations and charitable foundations, if such funds are offered under conditions which impose no restriction on the work of the Commission.

Report of Reference Committee on Insurance and Medical Service

Dr. W. D. Stovall, Chairman, presented the following report, which was adopted:

At the present time the American Medical Association is already engaged in many of the activities that are contemplated in this resolution. In order that there be an integration of these services with other studies and those that may be recommended, and because of the amount of money that would be required to implement this body, this resolution is referred to the Board of Trustees.

Resolutions on Specialty Board for Microbiology

The following nine resolutions dealing with the same subject were introduced by (1) Drs. William F. Costello, New Jersey, (2) Val H. Fuchs, Louisiana, (3) Karl S. J. Hohlen, Nebraska, (4) John P. Culpepper, Mississippi, (5) Charles L. Farrell, Rhode Island, (6) Eugene F. Hoffman, California, (7) Carlton E. Wertz, New York, (8) M. G. Westmoreland, Section on Pathology and Physiology, and (9) Harlan English for the Illinois delegation, respectively, and were referred to the Reference Committee on Medical Education and Hospitals:

(1) Resolutions on Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a Medical School approved by the Council on Medical Education and Hospitals and must be licensed to practice Medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval in order to safeguard the interests and welfare of patients; and be it further

Resolved, That the delegates of the Medical Society of New Jersey to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association.

(2) Resolutions on Medical Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Medical Specialty Board in Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

(3) Resolutions on Limitation of Approval of Specialty Boards

WHEREAS, There is a movement to have the Council on Medical Education and Hospitals approve a specialty board composed in part of nonphysicians and designed to certify nonphysicians in certain branches of laboratory medicine; and

WHEREAS, The American Medical Association is in concept and practice entirely a medical body for the betterment of medical practice; and

WHEREAS, The approval of a nonphysician specialty board would be contrary to the interest and intent of the American Medical Association; therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, which include the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials; and be it further

Resolved, That the delegates of the Nebraska State Medical Association to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association, and that the delegates be instructed to vote against any modification of the qualifications for specialty certification which would include nonphysicians if such modifications are introduced to the House of Delegates of the American Medical Association.

(4) Resolutions on Specialty Board in Medical Microbiology

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with those essentials, in order to safeguard the interests and welfare of patients.

(5) Resolutions on Approval of Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

(6) Resolutions on Medical Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Medical Specialty Board of Microbiology which would certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; therefore be it

Resolved, That the House of Delegates of the American Medical Association affirm its approval of the previously established Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination for regular certification must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the members of any medical specialty board be graduates of a medical school approved by the Council on Medical Education and Hospitals; and be it further

Resolved, That the Council on Medical Education and Hospitals of the American Medical Association limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of the public.

(7) Resolutions on Specialty Boards

WHEREAS, There is a movement to have the Council on Medical Education and Hospitals approve a specialty board composed in part of nonphysicians and designed to certify nonphysicians in certain branches of laboratory medicine; and

WHEREAS, The American Medical Association is in concept and practice entirely a medical body for the betterment of medical practice; and

WHEREAS, The approval of a nonphysician specialty board would be contrary to the interest and intent of the American Medical Association; therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, which include the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials; and be it further

Resolved, That the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to place these resolutions before the June, 1952 session of the House of Delegates of the American Medical Association.

(8) Resolutions on Limitation of Approval of Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

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(9) Resolutions on Specialty Board Approval

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates of the American Medical Association reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals, and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients; and be it further

Resolved, That the delegates of the Illinois State Medical Society to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association.

Report of Reference Committee on Medical Education and Hospitals

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

Resolutions Introduced by Dr. W. F. Costello, New Jersey, V. H. Fuchs, Louisiana, K. S. J. Hohlen, Nebraska, J. P. Culpepper, Mississippi, C. L. Farrell, Rhode Island, E. F. Hoffman, California, C. E. Wertz, New York, M. G. Westmoreland, Section on Pathology and Physiology, Harlan English, Illinois: Since the intent of these nine resolutions are essentially the same, the opposition to the formation of an American Board of Medical Microbiology, they will be considered together. The subject matter in the various resolutions is that the Council on Medical Education and Hospitals be instructed by the House of Delegates to limit its approval of specialty boards to those which can comply with the qualifications contained in the report of the Council on Medical Education and Hospitals entitled "Essentials for Approved Examining Boards in Medical Specialties" revised to Sept. 1, 1949.

These qualifications are briefly: (1) License to practice medicine in a state, territory or possession of the United States; (2) Graduate of an approved medical school in the United States or Canada, and (3) Special training in the particular special field.

It must be clearly understood that on any new matters, action or recommendation by the Council on Medical Education and Hospitals, which is a committee of the House of Delegates, must be submitted to the House of Delegates for its approval before being adopted. The Council on Medical Education and Hospitals has no power to initiate any policy regarding specialty boards contrary to any regulation previously adopted by the House of Delegates.

In the special report submitted to the House June 9, 1952, the Council on Medical Education and Hospitals recommends a study of the relationship of American medicine to professional nonmedical groups by the Council and the Board of Trustees. The Council further states that the recommendations of this study (the word "recommendations" being changed by your committee to "report") shall be presented to the House of Delegates for any action it may decide to take. Until that time the Council on Medical Education and Hospitals shall not approve or consider for approval the establishment of any new American Board which would involve the certification of other than doctors of medicine.

In the eight resolutions introduced by physicians from state medical societies in widely scattered areas of the country and one from the Section on Pathology and Physiology, they have stated in no uncertain manner how they feel about the subject, and your reference committee is confident that the Board of Trustees, the Council on Medical Education and Hospitals and the Advisory Board for Medical Specialties will give due consideration to the subject matter contained in these resolutions.

The Council on Medical Education and Hospitals has not recommended the approval of an American Board for any nonphysician group, and hence your reference committee feels it is unnecessary to take any action on these resolutions at this time but should await the report to the House of Delegates of the study of the Council on Medical Education and Hospitals and the Board of Trustees on the subject.

Resolution on Rate of Compensation for A. M. A. Dues Billing and Collection

Dr. William F. Costello, New Jersey, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, For the work entailed in the collection and recording of American Medical Association membership dues, the Medical Society of New Jersey presently is compensated at the rate of one per cent (1%) of the total monies involved; and

WHEREAS, The cost to the Medical Society of New Jersey for this work approximates three and one-half to four per cent (3½%-4%) of the total monies involved; therefore be it

Resolved, That the Medical Society of New Jersey respectfully requests that the American Medical Association make an equitable upward revision of the rate of compensation for the work of dues collection or release the Medical Society of New Jersey from the obligation of further collection of dues for the national organization.

Report of Reference Committee on Miscellaneous Business

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee requests the Board of Trustees to restudy the method and amount of compensation paid to state societies for the collection of American Medical Association dues after consultation and conference with the organization of secretaries and officers of state societies.

Resolution on Armed Forces Dependents' Medical Care

Dr. Jesse D. Hamer, Arizona, presented the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, Dependents of members of the armed forces at times need medical care under circumstances that involve financial hardships, lack of adequate governmental facilities, or both; and

WHEREAS, The physicians of the United States through their sponsored prepayment plans are able to provide medical care to such dependents on a service basis; and

WHEREAS, Many citizens entering military service already have protected their dependents against costs of illness through voluntary insurance; and

WHEREAS, Blue Shield and other medically sponsored plans enable their members to receive high quality medical care with free choice of physician; and

WHEREAS, Labor and industry generally have recognized that medical insurance benefits for dependents are important in developing better employee morale; now therefore be it

Resolved, By the House of Delegates of the Arizona Medical Association, Inc., that, if in the independent judgment of the Department of Defense or Congress, the welfare of our preparedness program requires that dependents of members of our armed forces receive medical care on a service basis, then the medical profession stands ready to provide such service through Blue Shield and other medical society sponsored plans, provided that the payments of all or part of the dues are made by the individuals who become members of the plan.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, submitted the following report, which was adopted:

Dr. Jesse D. Hamer, delegate from Arizona, presented a resolution the subject of which was "Armed Forces Dependents' Medical Care." No one appeared before the committee to explain or discuss this resolution, and the committee was a bit confused concerning the intent of the resolution; therefore no action was taken.

Resolutions on Medical and Hospital Benefits to Veterans

Dr. Jesse D. Hamer, Arizona, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Certain veterans hospitals have expressed a definite public policy of accepting non-service-connected disability cases among veterans; and

WHEREAS, In accepting such cases the policy has been expressed of accepting hospital benefits from commercial insurance companies; and

WHEREAS, Such cases are now and have been accepted on this basis, and such fees have been paid to the veterans hospital; and

WHEREAS, Such practice places the Government controlled and subsidized hospital and doctors in direct competition with the local hospital and medical facilities; and

WHEREAS, This practice is both competitively unfair to the local agencies and detrimental to service of both agencies on both a local and national basis; now therefore be it

Resolved, By the House of Delegates of the Arizona Medical Association, Inc., on recommendation of its council, that it adopt a firm policy of disapproval of this procedure on the part of veterans hospitals; and be it further

Resolved, That a copy of this resolution be sent to each Representative and Senator of the State of Arizona, the Veterans Administration's national offices, the American Hospital Association, the American Medical Association and each state medical association.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

There were several members of the Association who appeared in favor of this resolution; there was no one who expressed disagreement with it. The committee agrees with the principle expressed in the resolution and recommends its adoption by the House of Delegates and that the House refer it to the Special Committee of the Board of Trustees now examining Federal Medical Services, a progress report from which was received at this meeting.

Resolution on Change in Executive Committees of Sections

Dr. Edgar V. Allen, Section on Experimental Medicine and Therapeutics, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

WHEREAS, The delegate for each Section serves as liaison officer between the Section and the House of Delegates; and

WHEREAS, Information and counsel received from the delegate has proved to be of help to the Section and the Section officers and

WHEREAS, A more definite fixing of responsibility on the part of the delegate for work of the Section is desirable; therefore be it

Resolved, That the delegate for each Section shall be a member of the Executive Committee of that Section.

REPORT OF REFERENCE COMMITTEE ON SECTIONS AND SECTION WORK

Dr. Grover C. Penberthy, Chairman, presented the following report, which, since it recommended a change in the Constitution and By-Laws, was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

The resolution pertaining to a change in the Executive Committees of Sections was introduced by Dr. E. V. Allen. After full discussion of this resolution, your committee makes the following recommendation, which necessitates a change in the Constitution and By-Laws, Chapter VII, Section 6, which, under this recommendation, is to read:

"Executive Committees of Sections.—Each section shall have an executive committee which shall consist of the chairman, the last two previous chairmen, the secretary and section delegate. In case of absence of a majority of the executive committee of the section from a Scientific Assembly, the chairman shall appoint one or more members of the section to constitute a majority. The Committee shall approve or disapprove for publication the papers read before the section. It shall act as the nominating committee of the section except for the Section on Miscellaneous Topics."

Your committee recommends the adoption of this resolution.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schniff, Chairman, presented the following report, which was adopted and the By-Laws declared amended accordingly:

The Reference Committee on Sections and Section Work has approved a resolution presented by Dr. E. V. Allen and has recommended a change in the By-Laws, amending Chapter VII, Section 6, which was referred to this committee. Your reference committee approves, and recommends adoption of this amendment.

Resolution on Provision of Funds to Defray Expenses of Section Delegates

Dr. Edgar V. Allen, Section on Experimental Medicine and Therapeutics, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

WHEREAS, No dues are collected by the Sections of the Scientific Assembly and no funds are available for reimbursing the Section delegates, who are elected by the members of each Section, for expenses incurred when representing the Sections twice annually at meetings of the House of Delegates; and

WHEREAS, Delegates from the various states, officers, Trustees, and many committee members are reimbursed for the expenses incurred for attendance at the sessions of the House of Delegates; and

WHEREAS, Some Delegates chosen by Sections have not been able to serve because of inability to finance personally the cost of attending two sessions each year of the House of Delegates; and

WHEREAS, It is contrary to the democratic policies of the American Medical Association to select Section delegates on a basis of financial ability to pay their own expenses to the sessions of the House of Delegates; and

WHEREAS, The liaison maintained between the Sections of the Scientific Assembly and the House of Delegates is of value to the Sections, the House of Delegates and the entire American Medical Association; therefore be it

Resolved, That the House of Delegates instruct the Board of Trustees to pay the expenses of the Section delegates incident to attendance of the sessions of the House of Delegates.

REPORT OF REFERENCE COMMITTEE ON SECTIONS AND SECTION WORK

Dr. Grover C. Penberthy, Chairman, presented the following report, which was adopted:

A second resolution was also introduced by Dr. E. V. Allen. After due discussion and consideration by members appearing before your committee, we recommend the following:

WHEREAS, No dues are collected by the Sections of the Scientific Assembly and no funds are available for reimbursing the Section delegates for expenses incurred when representing the Sections twice annually at meetings of the House of Delegates; and

WHEREAS, Delegates from the many states and many committee members are reimbursed for the expenses incurred for attendance at the sessions of the House of Delegates; and

WHEREAS, Some Delegates chosen by Sections have not been able to serve because of inability to finance personally the cost of attending two sessions each year of the House of Delegates; and

WHEREAS, It is contrary to the democratic policies of the American Medical Association to select Section Delegates on a basis of financial ability to pay their own expenses to the sessions of the House of Delegates; and

WHEREAS, The liaison maintained between the Sections of the Scientific Assembly and the House of Delegates is of value to the Sections, the House of Delegates and the entire American Medical Association; therefore, be it

Resolved, That the House of Delegates instruct the Board of Trustees to pay the transportation and per diem allowance, as determined by the Board of Trustees, of the Section Delegates incident to attendance of the sessions of the House of Delegates.

Resolution on Medical Care of Veterans

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

Resolved, That the American Medical Association favors action looking toward the reduction of medical care to veterans with non-service-connected disabilities except where the inability to provide for such service can be demonstrated.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

This resolution is similar to others which have been presented and are now under study by the Committee on Federal Medical Services and requires no special action by the House of Delegates at this time.

Resolution on Medical and Hospital Benefits for Dependents of Service Personnel

Dr. Hugh H. Hussey, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

Resolved, That legislation to provide medical and hospital benefits for dependents of service personnel at federal expense be opposed by the American Medical Association until need for such legislation is clearly demonstrated.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

A resolution introduced by the delegate of the Medical Society of the District of Columbia pertained to medical and hospital benefits for dependents of service personnel. Your committee approves of this resolution but is of the opinion that further study is necessary and therefore suggests that the American Medical Association Board of Trustees committee now studying federal medical services conduct a more detailed study of this problem.

Resolution on Transfer of Disabled Veterans

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

Resolved, That the American Medical Association favors the transfer of seriously disabled veterans from service hospitals to Veterans Administration Facilities.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

The committee approves of this resolution and calls the attention of the House to the fact that testimony before the committee indicated that this is being done as rapidly as possible. We approve of such transfers at as early a date as practicable.

Resolution on Reactivation of Committee on Motor Vehicle Accidents

Dr. Hugh H. Hussey, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Whereas, The continuing high mortality and disability due to automobile accidents is cause for great concern; and

Whereas, There is need for further efforts to reduce the number of accidents; therefore be it

Resolved, By this House of Delegates that the Committee on Motor Vehicle Accidents of the American Medical Association be reactivated.

Report of Reference Committee on Hygiene and Public Health

Dr. William F. Costello, Chairman, presented the following report, which was adopted:

Your reference committee recommends that this matter be referred to the Board of Trustees. It is suggested that the Board of Trustees communicate with the National Safety Council, the American Automobile Association and other interested organizations. If in their judgment the services of such a committee can be helpful to these organizations in accident prevention work, we recommend that the Board of Trustees reactivate the Committee on Motor Vehicle Accidents.

Resolution on Candidates for Public Office

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, It is the duty of every physician to discharge all the responsibilities of citizenship, including those of a political nature; and

Whereas, It is not the function of his professional medical organization to participate in partisan politics; therefore be it

Resolved, By the House of Delegates that The American Medical Association does not support any political party or any candidate for elective public office.

Report of Reference Committee on Legislation and Public Relations

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

Your committee considered the resolution introduced by Dr. Hugh H. Hussey on behalf of the Medical Society of the District of Columbia relative to candidates for public office. Your committee recommends its adoption.

Resolution on Change of Date for Deciding Apportionment of Delegates

Dr. George A. Earl, Minnesota, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Whereas, Section 1 (C) of Chapter IX, Division Three of the By-Laws of the American Medical Association designates Dec. 1 of each year as the date on which the number of active members is computed in determining apportionment of delegates to the said American Medical Association; and

Whereas, The payment of dues is frequently made by such members in the month of December; now therefore be it

Resolved, That the said Section 1 (C) of Chapter IX, Division Three of said By-Laws be amended by striking the number "1" in the sixth line thereof and inserting in lieu thereof the number "31"; that said section be further amended by striking the word "December" in the ninth line thereof and inserting in lieu thereof the word "January," and that said section be still further amended by striking the words "the next succeeding year" in the last line thereof and inserting in lieu thereof the words "that year."

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Leo F. Schiff, Chairman, submitted the following report, which was adopted and the By-Laws amended accordingly:

This resolution seeks to change the date of deciding on the apportionment of delegates from constituent associations from Dec. 1 to Dec. 31 of each year. It provides that the Secretary of the American Medical Association shall notify the respective constituent associations in January as to the number of delegates to which the constituent associations will be entitled for the current year. The reason advanced for this is that many state medical societies are still collecting dues from their members during the month of December of each year and find themselves possibly in a position of disadvantage if the apportionment is based on paid membership as of Dec. 1. Dr. Lull has assured the reference committee that this postponement of date of deciding apportionment will not make any great difference to procedure in his office. We therefore recommend the adoption of the resolution which, with some changes in wording made by the reference committee, reads as follows:

Resolved, That Section 1 (C) of Chapter IX, Division Three of the By-Laws be amended by substituting the date "December 31" for "December 1" in the sixth line; by substituting the word "January" for the word "December" in the ninth line; and deleting the phrase at the end of the paragraph "next succeeding year," substituting therefor the phrase "current year."

Resolution on Apportionment of Delegates

Dr. George A. Earl, Minnesota, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Whereas, Delegates from constituent state associations to the American Medical Association are elected or appointed according to Section 1 (B) of Chapter IX, Division Three of the By-Laws of the American Medical Association for two year terms and assume office Jan. 1, next after their election or appointment; and

Whereas, The apportionment of delegates as between the respective states is determined according to Section 1 (C) of Chapter IX, Division Three of the said By-Laws as of December 1 of each year which date is after said delegates have been elected or appointed; and

Whereas, Such requirements result in depriving certain elected delegates of the privilege of serving out the term for which they were duly elected, in the event it is determined on said date, to wit Dec. 1, that said state association is apportioned less than the then elected or appointed number of delegates; now therefore be it

Resolved, That Section 1 (C) of Chapter IX, Division Three of said By-Laws be amended by adding the following at the end thereof:

"Provided, however, that any delegate or alternate therefor, who at said time of apportionment is a duly elected or appointed delegate or alternate therefor, and who at the time of his election or appointment was elected or appointed in accordance with these By-Laws and has not completed the term for which he was duly elected or appointed shall be permitted to complete the said term of two years or portion thereof to which he was duly elected or appointed."

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Leo F. Schiff, Chairman, presented the following report, which was adopted and the By-Laws declared so amended:

This resolution calls attention to the fact that delegates from constituent associations to the American Medical Association are elected for two-year terms, assuming office Jan. 1 next after their election. The apportionment of delegates from the constituent associations is decided on each year as of Dec. 1 (or 31, if another resolution by Dr. Earl is adopted), which date comes after delegates have been elected. If any constituent association has the size of its delegation reduced in accordance with the provisions of the By-Laws, it can happen that a delegate duly elected may not be allowed to serve, thereby depriving him and his association of a privilege to which they were entitled at the time of the election of such delegates. It was pointed out that a similar situation occasionally occurs in the Congress of the United States when the number of representatives allowed a given state might be reduced. In such cases, any duly elected member of the Congress from that state is allowed to serve out his term for which he was elected, even though this may temporarily result in a delegation larger than indicated by apportionment. It is suggested by the resolution that a similar procedure be adopted in this Association. The resolution, in which some changes in wording have been made by the reference committee, reads:

Resolved, That Section 1 (C), Chapter IX, Division Three of the By-Laws be amended by adding thereto the following sentence: "Any delegate or alternate who was elected or appointed in accordance with these By-Laws, and who at the time of apportionment has not completed the term for which he was duly elected or appointed shall be permitted to complete such term as delegate or alternate."

Provision for appointment has been made because of the fact that a delegate may possibly be appointed in certain instances to fill out an unexpired term.

Passage of this amendment will avoid a situation in which a state association with a certain number of duly elected delegates may find it necessary to reduce the size of the delegation. The question will arise as to which one of the delegates should be deprived of his office. On the other hand, it will of course result in some state or states temporarily having a delegation slightly larger than that to which they are entitled.

The matter was discussed with the proposer of the resolution, the Chairman of the Council on Constitution and By-Laws and Dr. Lull. It was agreed that, although this matter requires considerable further study by the Council on Constitution and By-Laws, this resolution should be adopted now to avert possible injustice and discontent among the state delegations.

Resolution on Physicians' Malpractice and Hospital Liability Insurance

Dr. J. P. Culpepper, Mississippi, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Commercial insurance companies which issue physicians' malpractice and hospital liability insurance base their premium rates on the total experience of claims in these obviously diversified types of insurance; and

WHEREAS, The Mississippi State Medical Association contends that this practice is unfair to the physician purchasing a malpractice insurance contract, now therefore be it

Resolved, That the House of Delegates of the American Medical Association require the appointment of a committee or committees to investigate and study this inequity and to undertake to achieve an agreement with the underwriting companies to the end that physicians' malpractice insurance be rated in separate and distinct categories and that premiums of each be based on the claims experience for this type of risk only.

Report of Reference Committee on Insurance and Medical Service

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

During the hearings on this resolution some differences of opinion arose. These revolved around whether or not it is an issue that has to be handled entirely by the individual state societies due to individual legal problems arising in the states, or whether it is a problem which should be recognized by the American Medical Association and some assistance given to the states in an effort to arrive at a satisfactory solution. The committee in its consideration following the hearings felt it could make no definite recommendation since it is not familiar with the various legal problems involved, and recommends that, lacking available information on the subject matter of the resolution, no action be taken at this time.

Resolution on Internships and Residencies

Dr. Samuel J. McClendon, California, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, The number of internships and residencies now far exceeds the number of physicians available for these positions; and

WHEREAS, This situation is now creating a problem of inadequate medical coverage in many hospitals; and

WHEREAS, The employment of physicians by hospitals which cannot obtain interns and/or residents is creating a situation which jeopardizes the educational training program; and

WHEREAS, Such an imbalance may very well lead to further governmental intervention in our physician training programs; and

WHEREAS, The number of residencies and internships available seems to be increased by ever increasing demands of hospitals for larger resident staffs with resulting inability by some hospitals that do not offer the fullest training to obtain interns and residents; therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals of the American Medical Association to undertake an immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the gross imbalance between the large number of established residencies and internships and the small number of physicians available to fill them, with definite action, as soon as possible.

Report of Reference Committee on Medical Education and Hospitals

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

This resolution deals with the question of the number of internships and residencies exceeding the number of physicians available for these positions and requests the Council on Medical Education and Hospitals to undertake an immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the imbalance between the large number of established internships and residencies and the small number of physicians available to fill them with definite action as soon as possible. Your reference committee approves of this resolution.

Resolutions on Reevaluation of American Boards

Dr. John J. Curley, Massachusetts, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, A continuance of the lengthy program for certification now required by certain boards tends to delay provision of medical care to the public and tends to promote concentration of physicians in heavily populated areas; and

WHEREAS, The disparity between the character of approval accorded university and teaching hospitals and the character of approval of other institutions tends to create an intern and residency problem; be it

Resolved, That the Massachusetts Medical Society, through its delegates to the American Medical Association, recommend to the 1952 session of that organization that the Council on Medical Education and Hospitals seek a reconsideration of the requirements of the American Boards to the end that certain residency programs be shortened in the interest of the public welfare; and be it further

Resolved, That the method of classifying services of a hospital in terms of years as announced by the American Boards in 1949 be reconsidered.

Report of Reference Committee on Medical Education and Hospitals

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

These resolutions state that the disparity between the character of approval of the University and teaching hospitals, likewise other institutions, tends to create by reason of time consumed in training a delay in providing medical care for the public. They also require that the method of classifying services of a hospital in terms of years as announced by the American Boards in the medical specialties in 1949 be reconsidered.

Your reference committee approves of the intent of the first resolution, but disapproves of the wording, because as written it commits the Council to strive to shorten the period of intern and residency training.

Your reference committee appreciates the great amount of study and work which the Council on Medical Education and Hospitals, the Advisory Board for Medical Specialties, and the specialty boards have given to provide qualitative and quantitative training programs for interns and residents. Your committee, therefore, recommends to the House of Delegates of the American Medical Association, as assembled June 9, 1952, a substitute resolution that this report be referred to the Council on Medical Education and Hospitals for careful study and consideration as to what rearrangements if any can be made in this type of training. Your reference committee recommends the adoption of this substitute resolution.

Resolution on Cooperation Between Medical and Dental Professions

Dr. George Braunlich, Iowa, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, (1) The need for and the desirability of close cooperation between the medical profession and the dental profession for the welfare of the patient is imperative; and

WHEREAS, (2) The present requirements for approval of hospitals by the American Board of Oral-Dental Surgery are as follows:

"Dental practice that deals with the diagnosis, treatment, prescribing for, or operating upon any disease, injury, malformation, or deficiency of the human jaws or associated structures.

"It is a requirement of the Board that, if the Department of Oral Surgery is to be recognized by the Board, it must be separately organized and on a parity with other surgical departments. The staff member directly responsible for the administration of the training program should be certified by the American Board of Oral-(Dental) Surgery. Otherwise the Board has no way of gauging the scope of instruction. As a separately organized department the staff members and trainees should be empowered to admit and to discharge patients and be entirely responsible for the care of the oral surgery problem."; and

WHEREAS, (3) The statement "associated structures" in this requirement has encouraged some dentists to handle the treatment of malignancies and to do neck surgery and plastic surgery; and

WHEREAS, (4) A liberal interpretation of these requirements has, at the present time, been so made at certain institutions that dentists are invading the field of medicine, such invasion is dangerous to the welfare of the patient; and

WHEREAS, (5) Such an interpretation is contrary to the statutes of some states as expressed by opinions of their Departments of Health; therefore be it

Resolved, That the House of Delegates of the American Medical Association disapproves the recognition of the Board of Oral (Dental) Surgery requirements for hospital approval by that Board (as it affects individuals with a D.D.S. degree only) until changes are made in these requirements that will prevent those without M.D. degrees from invading the field of medical practice.

Report of Reference Committee on Medical Education and Hospitals

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

Your reference committee is in accord with the intent of this resolution but feels that it should be disapproved at this time because certain requirements established by the American Board of Oral-Dental Surgery are capable of various interpretations. Your reference committee, therefore, recommends that the Board of Trustees of the American Medical Association confer with the American Board of Oral-Dental Surgery to the end that a clear definition of medical and dental services be established. It must not be forgotten that only properly qualified physicians may practice medicine.

Resolution on Osteopathy

Dr. Eugene F. Hoffman, California, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It is in the public interest that the best medical care be generally available; and

WHEREAS, This objective would be furthered by eventual amalgamation of the medical and osteopathic professions in which future graduates and practitioners would have equal training of the highest scientific caliber; therefore be it

Resolved, That the House of Delegates of the American Medical Association urges immediate action to accomplish an eventual amalgamation of the medical and osteopathic professions under circumstances which would be acceptable to the Judicial Council and the Board of Trustees of the American Medical Association and that these bodies be requested to recommend specific procedures for the accomplishment of these objectives.

Report of Reference Committee on Miscellaneous Business

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends that this resolution be referred to the Board of Trustees to appoint a committee for further study and consultation with the American Osteopathic Association if or when requested.

Resolution on Hospital and Medical Care of Veterans

Dr. Gerald V. Caughlan, Iowa, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, The hospital and medical care of the veteran with service-connected disability or disease and the care of the medically indigent veteran with non-service-connected disability or disease is and should be the just concern of the public and the medical profession; and

WHEREAS, The free care of the veteran with non-service-connected disability or disease who can pay for his hospitalization and medical care is contrary to our traditional system of government and is an unwarranted burden on the taxpayer and threatens the quality of care to the deserving veteran by overloading the professional services of veterans hospitals; therefore be it

Resolved, That this House of Delegates strongly recommends that the Veterans Administration be required to furnish a form for oath as to the inability of the applicant to defray the necessary medical expenses, and that this oath shall be read to the applicant stating that he is signing an oath as to his financial status.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, submitted the following report, which was adopted after discussion:

The reference committee approves of the resolution in principle but suggests a change in wording by the deletion of the word "oath" and the substitution of the words "signed statement for eligibility to pay" and an explanation to the veteran so that he realizes that by signing this application he is admitting inability to pay.

Resolution on Limitation of Federal Taxation

Dr. John K. Glen, Texas, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Federal taxation has shown a steady tendency toward unlimited increase; and

WHEREAS, Such heavy federal taxation limits the state and local units of government in their taxing ability; and

WHEREAS, This trend of taxation by the federal government is rapidly destroying the economy of this Nation; and

WHEREAS, If this trend continues the state and local governmental units will become impotent and will in time have to rely entirely on doles from an all-powerful federal government; and

WHEREAS, It is felt that each physician should accept his responsibility not only as a physician but as a citizen and should actively participate in all matters at local, state and national levels that will help preserve those principles of government on which this Nation was founded; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record as favoring an amendment to the Constitution of the United States limiting the taxing power of the federal government.

Report of Reference Committee on Legislation and Public Relations

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted unanimously:

Your committee has considered carefully the resolution introduced by Dr. John K. Glen on behalf of the Texas delegation relative to the limitation of federal taxation. While your committee realizes that the prime objective of the American Medical Association is, and always has been, the furtherance of health through prevention and treatment of disease, medical research, and the improvement of medical education, it is apparent to all that these objectives can be attained only on the basis of a sound national economy not liable to disruption by confiscatory taxation imposed by a bureaucratic federal government. Your committee believes, moreover, that the time has arrived when the American Medical Association should approve broad basic governmental principles outside the actual field of medicine as pertaining to the general welfare of the American people. Therefore, your committee approves this resolution and recommends its adoption.

Resolution on Disapproval of Certain Veterans Administration Practices

Dr. H. Russell Brown, South Dakota, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

Whereas, It appears that United States Veterans Administration hospitals have been accepting non-service-connected cases who are known by them to be covered by insurance against hospital and medical expenses, or who are insured under Workmen's Compensation laws; and

Whereas, In treating such cases it has become the practice of the veterans hospitals to accept fees for hospital and medical care from insurance companies; and

Whereas, The practice of accepting non-service-connected cases definitely increases the demand for more hospital beds in veterans hospitals and sometimes prevents the acceptance of service-connected cases, who are more justly entitled to such hospital beds; and

Whereas, The practice of accepting non-service-connected cases who are covered by insurance against hospital and medical expenses, or who are insured under Workmen's Compensation laws, increases the demand for more and more personnel for the veterans hospitals, both medical and nursing staffs, as well as administrative; and

Whereas, Such increased personnel in the medical and nursing staffs is becoming more and more difficult to obtain because of increased quotas of physicians and nurses needed by the Armed Forces; and

Whereas, Such practice places the government-controlled and subsidized veterans hospitals and doctors in competition with local private hospitals and physicians; and

Whereas, This practice is competitively unfair to the local physicians and hospitals and detrimental to both medical agencies on a local and national level; therefore be it

Resolved, That the House of Delegates of the American Medical Association in session in June, 1952, adopt a firm policy of disapproval of practices of the Veterans Administration in accepting for medical care, non-service-connected cases which are covered by insurance and in accepting insurance company fees therefor.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

The committee approves of this resolution but suggests that it requires study and recommendation and we suggest that it be referred to the Board of Trustees and to the Committee on Federal Medical Services.

Resolutions on Medical Care for Veterans

Dr. Raymond F. Peterson, Montana, introduced the following resolutions, which were referred to the Reference Committee on Medical Military Affairs:

Whereas, The members of the House of Delegates of the American Medical Association are in full agreement that veterans should receive the highest quality of medical and hospital care for service-connected disabilities and for diseases for which they are unable to pay necessary expenses; and

Whereas, The present Acts of Congress permit medical treatment of veterans with non-service-connected disabilities for which they are unable to pay; and

Whereas, Paragraph 30 on V.A. form 10 P 10 questions, "Are you financially able to pay necessary expenses of hospital or domiciliary care?", the answer to which is not allowed to be investigated; now therefore be it

Resolved, That we, the members of the House of Delegates of the American Medical Association, in regular session assembled this 9th day of June, 1952, urge the Congress of the United States to clarify the statement in the present Acts of Congress admitting veterans to veterans hospitals on certification of a statement that they are unable to pay for their hospital and medical care, and that the Veterans' Administration be empowered and directed to investigate such claims of veterans to determine their actual financial status; and be it further

Resolved, That a copy of this resolution be mailed to the President of the United States, the members of the United States Senate and House of Representatives, the Administrator of Veterans Affairs, and the Chief Medical Director of the Veterans Administration.

Report of Reference Committee on Medical Military Affairs

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

A resolution introduced by the delegate from Montana pertaining to non-service-connected disabilities was referred to the Board of Trustees and the special Committee on Federal Medical Services.

Report of Committee on Credentials

Dr. Karl S. J. Hohlen, Chairman, reported that there was nearly 100% registration of delegates, there being only one delegate, the representative of the Alaska Territorial Medical Association, not in attendance.

Introduction and Remarks of Dr. Ernest E. Claxton, Assistant Secretary, British Medical Association

Dr. George F. Lull, Secretary, presented Dr. Ernest E. Claxton, Assistant Secretary of the British Medical Association, who spoke to the House as follows:

Mr. Speaker, Members of the House of Delegates: This is a great privilege of a humble official on the staff of the British Medical Association, your sister body, if I may say so, to come here and present greetings from the British Medical Association. I happened to be in this country for a fortnight at Mackinac Island attending the World Assembly for the Moral Rearmament of the Nations and, hearing that the American Medical Association was meeting, I thought I must bring, at the request and desire of my President and Sir Henry Cullen, Dr. Clegg and Dr. Warren, who will be known to many of you here, the greetings of the British Medical Association.

I would like to congratulate you and thank you for your hospitality and particularly your President on his magnificent fighting speech yesterday. We in England have a lot to learn. We failed because we had no adequate alternative program, and I see over here that you have it, and you have more than that; you have fought for your nation and the world instead of just your own community.

I believe that medicine's role and destiny in this atomic age is to give the nations of the world the answer, the secret of living together, that medicine can be an inspiring, uniting and cleansing force in the nations, and that we move from treating sick people to treating a sick world. I believe friendship and caring and service and mutual understanding and a passion for what is right, not who is right, is the answer for an atomic age, and I have evidence that it is even reaching beyond the Iron Curtain. On that basis our Association, with your Association, will go places, and we would like to fight with you.

Presentation of Gavel to Dr. Louis H. Bauer

Dr. John M. Galbraith, President of the Nassau County, New York, Medical Society, presented Dr. Louis H. Bauer with a gavel, which he said the Nassau County Medical Society had been saving for thirty years to present to a President of the American Medical Association who was a member of the Nassau County society.

Resolution on Emergency Seating of Alternate Delegates

Dr. John J. Curley, Massachusetts, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The House of Delegates of the American Medical Association has expressed its opinion that all states and territories should be represented at all times in sessions of the House of Delegates; and

WHEREAS, The House of Delegates approved a change in the Constitution and By-Laws of the American Medical Association at its 1951 Annual Session whereby in emergencies a responsible state officer may designate an alternate to represent a delegate, if such delegate is taken ill or called away from a meeting of the House of Delegates; and

WHEREAS, It is often difficult to get a state officer, namely the president or secretary of a state or territorial association, to give a written credential to an alternate; and

WHEREAS, Often the president or secretary of a state or territorial association is not present at the meetings of the House of Delegates; and

WHEREAS, Some state and territorial associations elect a specific alternate for each delegate to the meetings of the House of Delegates; therefore be it

Resolved, That in case of emergency as designated by the House of Delegates and in case a responsible officer of a state or territorial medical association cannot give written credentials to an alternate of that state or territorial medical association, a majority of the delegates of such state or territorial medical association shall be allowed to designate any duly elected alternate to represent that state or territorial medical association for the remainder of the meeting of the House of Delegates. In the states or territories where one to three represent the above mentioned associations, the single member or the two remaining members shall be permitted to choose the alternate to represent their state or territory if a responsible state or territorial officer cannot be reached to designate the alternate to represent the absent delegate.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, presented the following report, which was adopted:

This resolution seeks an amendment to the By-Laws whereby the delegation of a constituent association would be authorized in certain emergencies to appoint alternate delegates. It would require an amendment to Chapter IX, Section 1 (D) (page 24). A close study of this section of the By-Laws brings out the fact that it is in conflict with Section 2, Article 6 of the Constitution. If any action is to be taken on this proposed amendment to the By-Laws it must be preceded by an appropriate change in the Constitution. The matter is therefore recommended to be referred to the Council on Constitution and By-Laws, at the same time calling its attention to the conflict between the last paragraph of Section 1 (D), Chapter IX of the By-Laws with the Constitution.

Resolution on Jurisdiction of Judicial Council

The Speaker, for Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, presented the following resolution, which he referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The deliberations of the Judicial Council are impeded by the provision in Chapter X, Section 4 (H), paragraph 2, first sentence, page 32, which reads in part as follows: "The Council shall have appellate jurisdiction in questions of law and procedure but not of fact . . ."; and

WHEREAS, The interests of the members of the medical profession, the component and the constituent societies and the American Medical Association are jeopardized because of this provision; therefore be it

Resolved, That that portion of the first sentence of Chapter X, Section 4 (H), paragraph 2, on page 32, be changed so that it will read: "The Council shall have appellate jurisdiction in question of law, procedure and fact . . ."

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, submitted the following report, which was adopted:

After considerable discussion with delegates from several constituent state associations and a state executive officer and an attorney, it was brought out that the suggested change might be contrary to certain accepted principles of law. It is therefore recommended that this proposed amendment to the By-Laws should not be acted on at the present time but should be referred to the Council on Constitution and By-Laws for study and legal review and advice, for report at the Interim Session of this House of Delegates. Dr. Buie, sponsor of the resolution, was present at the meeting and agreed to this recommendation.

Supplementary Report of Board of Trustees on Military Credit for Internships in Military Hospitals

Dr. Dwight H. Murray, Chairman, presented the following supplementary report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

Existing administration regulations of the Department of Defense recognize the period spent in military internships toward the discharge of obligatory service under Public Law 779, 81st Congress, for physicians classified in Priority 3 under that law, and this policy results in an undue advantage for military hospitals in competing with civilian hospitals for medical graduates.

The Board of Trustees, therefore, recommends that the American Medical Association oppose any regulation which would thus allow internship service to count against total military and reserve obligation and that this opposition be communicated to the Secretary of Defense.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Harold F. R. Brown, member of the reference committee, presented the following report, which was adopted:

Your committee, after consultation with official representatives of the armed and public health services, finds out that at the present time existing administrative regulations of the Department of Defense do not allow the period spent in military internships toward the discharge of obligatory service under Public Health Law 779 (draft law for doctors). As a matter of fact, anyone serving one year in military internship is obliged to spend an extra year beyond the usual twenty-four month period in the armed services. Your committee therefore recommends that the House of Delegates approve the suggestion of the Board of Trustees that the American Medical Association oppose any regulation which would allow intern service to count against total military and reserve obligation, and that this opposition be communicated to the Secretary of Defense.

Supplementary Report of Board of Trustees on Citation for Distinguished Service

Dr. Dwight H. Murray, Chairman, presented the following supplementary report of the Board of Trustees, which was adopted unanimously:

The Board of Trustees wishes to submit to the House of Delegates at this time the name of the late Howard W. Blakeslee, science editor for the Associated Press, as the recipient of the Citation for Distinguished Service. Mr. Blakeslee died suddenly on May 2, 1952, after a long newspaper career, 25 years of which were devoted to science writing. Although he had no formal scientific education, he pioneered in a job that eventually brought him success, honor and respect. He was noted for the accuracy of his stories about medicine and medical research and received many honors, including the Pulitzer Prize for Reporting in 1937. If the House of Delegates approves of the presentation, posthumously, of the Citation for Distinguished Service to Mr. Blakeslee, a suitably engrossed certificate will be prepared and sent to his widow.

Resolutions on Health Needs of the Nation

Dr. Earle M. Chapman, Massachusetts, introduced the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The health needs of each individual, each community and each state within the Nation are of immediate and continuing concern to every physician; and

WHEREAS, The proper appraisal of these needs and the formulation and execution of effective health programs to meet these needs require the

cooperative effort of all professional health organizations, of all voluntary and governmental health agencies, of business, agriculture, and labor, and of all other groups representative of the general public; and

WHEREAS, Temporary committees or commissions organized by any single interest, no matter how diligently or sincerely they may approach these problems, cannot develop a comprehensive and continuing study of the health needs of the Nation; and

WHEREAS, There now exists a national voluntary coordinating body, the National Health Council, which is representative of 42 national organizations concerned with health, including the American Medical Association (a founding—in 1921—and active member), and which offers a proper mechanism for health planning throughout the Nation; therefore be it

Resolved, That the American Medical Association through its House of Delegates affirm at this meeting its full support of the National Health Council; and be it further

Resolved, That the House of Delegates direct the officers and Trustees of the American Medical Association to request the National Health Council to undertake a comprehensive and continuing study of the health needs of the nation and to report back to the House of Delegates at its interim meeting, December, 1952, the response of the National Health Council to this request.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which was adopted:

Your reference committee considered this resolution and was assisted in its deliberation by Dr. Earle M. Chapman, Dr. Thomas P. Murdock and Dr. Lewis S. Pilcher. In view of the fact that many surveys by several agencies are now in progress and reports from at least two of them are expected in the near future, it seems inadvisable at this time for the American Medical Association to engage in any other surveys, and we recommend the rejection of this resolution.

Telegram from Mr. Millard Caldwell, Federal Civil Defense Administrator

Dr. George F. Lull, Secretary, read to the House the following telegram addressed to the President and Members of the Board of Trustees of the American Medical Association:

"America is indebted to the American Medical Association for its splendid work in promoting the Nation's health and welfare in peace and in war. Our special congratulations to the Association for the development of its excellent and far-reaching program of civil defense medical preparedness under the guidance of the Council on National Emergency Medical Service. No professional group in the Nation has taken more action than the medical profession to meet disastrous consequences of an all-out enemy attack on the American home front. The possibility of hundreds of thousands of civilian casualties in our cities has nowhere been more realistically appraised than in your group. The sound medical programs for meeting such a civil defense emergency are well advanced. If an attack should come, they will result in saving thousands of lives that might otherwise be lost. But doctors can not work without supplies and equipment. By June 30 of this year a total of eighty-one million dollars worth of civil defense emergency medical supplies and equipment will be available or in production for civil defense emergency. Fifty-nine million dollars will be in federal stockpiles and twenty-two million dollars worth will be stockpiled by the states with fifty per cent matching funds from the federal government. We hope to be able to provide to the full extent of funds made available to us the emergency medical supplies and equipment necessary to enable American doctors to do the excellent job they are prepared to do in the event of a smashing, all-out attack on the home front of the United States."

Telegram from Dr. T. C. Routley, Secretary, Canadian Medical Association

Dr. George F. Lull, Secretary, read the following telegram from Dr. T. C. Routley, Secretary of the Canadian Medical Association: All of us here in Banff at the 83d annual meeting of the Canadian Medical Association send most cordial greetings to all of you good neighbors in annual session assembled. May I add my own personal wishes and say how sorry I am that I cannot be with you. Kindest regards.

Gifts to American Medical Education Foundation from Woman's Auxiliary

Dr. Louis H. Bauer, President, called Dr. Elmer L. Henderson to the platform to receive a check for $10,000 made out to the American Medical Education Foundation, which had been presented to Dr. Bauer at the annual luncheon of the Woman's Auxiliary with the officers and Trustees of the American Medical Association.

Dr. Bauer also presented Dr. Henderson with a check for $100, representing a personal wedding anniversary gift from the retiring President of the Auxiliary, Mrs. Wahlquist, and her husband, Dr. Harold F. Wahlquist.

Dr. Henderson, President of the Foundation, accepted the gifts with the following remarks:

Thank you, Dr. Bauer, for bringing these checks, and I want to thank the Woman's Auxiliary publicly for its generosity. If you remember, last year they gave us $10,000. They are doing it again this year, and I hope they will be able to continue to do so. I also want to thank Dr. and Mrs. Wahlquist for their contribution of $100. I think it is a wonderful way to celebrate their anniversary.

As you know, the other day Dr. Mather Pfeiffenberger of Illinois presented me with a check for $1,000, a gift from him and his wife. He later talked with me and suggested that we create a $1,000 Club. I think that is wonderful. I wish we could create a $1,000 Club and have a couple of hundred thousand members. Last year eight members of the American Medical Association gave $1,000 apiece, and I am hoping those eight members will do the same thing this year.

There was another man who came to me, an officer of this Association, who suggested that we establish a $100 Club, a club of people who contribute $100 a year, and have men pledged to give $100 a year so long as they live or so long as they are financially able to give $100 a year. I think that is a splendid idea.

Gentlemen, this is a job that must be done by the doctors. The obligation is ours, and we cannot afford to let medical education get into the hands of the federal government.

On motion of Dr. Walter E. Vest, West Virginia, the House voted to direct the Secretary to telephone the Woman's Auxiliary in session at the Conrad Hilton Hotel and extend the thanks of the House of Delegates to the Auxiliary and also to Dr. and Mrs. Wahlquist.

Resolutions Commending Services of Dr. John W. Cline

Dr. William A. Hyland, Michigan, with the unanimous consent of the House, presented the following resolutions, which were adopted by a unanimous rising vote:

WHEREAS, Dr. John W. Cline has capably and vigorously discharged the many heavy duties and responsibilities of the office of President of the American Medical Association this past year and with the dignity and tact that are his attributes; and

WHEREAS, His modesty is such as would forbid this expression of indebtedness and esteem for his service on behalf of all doctors of medicine; and

WHEREAS, We, the members of the House of Delegates, are in the position to appreciate fully the contributions and the sacrifices he has made, especially in his forceful opposition to socialism in all of its myriad forms; now therefore be it

Resolved, That this House of Delegates by the adoption of this resolution, herewith officially express its commendation and heartfelt thanks to Dr. Cline for his devotion to the ideals of our profession and his real contributions toward its advancement during his tenure of office as President of the American Medical Association, and by so adopting this resolution we again bespeak our respect and affection; and be it further

Resolved, That a copy of this resolution, after being spread upon the minutes, be made and attested to and presented to Dr. Cline.

Resolution on Participation of Specialists in Emergency Medical Service

Dr. Leo F. Schiff, New York, by unanimous consent, introduced the following resolution, which was adopted:

WHEREAS, As result of a resolution passed by this House of Delegates, the Council on Medical Education and Hospitals, through the Liaison Committee of the Council on Medical Education and Hospitals and the Advisory Board of Medical Specialties, has urged the Advisory Board

of Medical Specialties to take action so that participation in emergency medical service should not prejudice the standing of a physician with a specialty board; now be it

Resolved, That the Trustees of the American Medical Association are hereby urged to exert continuing pressure so that the objectives of the foresaid resolution of this House of Delegates may not fail of achievement.

Resolution on Change in Name of Grievance Committee

Dr. Joseph F. Shuffield, Arkansas, presented the following resolution, which was referred to "an appropriate" reference committee for report at the December interim session:

WHEREAS, The name Grievance Committee carries a certain opprobrium and might be misleading in the eyes of the public; and

WHEREAS, The work to be accomplished by this committee is to foster better public relations, giving the public knowledge and information that a committee exists to settle any differences that might arise between the patient and his physician; and

WHEREAS, The name Professional Relations Committee is readily recognized as being a committee to settle such difficulties; therefore be it

Resolved, That the name Grievance Committee be changed to Professional Relations Committee.

Recognition of Distinguished Guest

The Secretary announced that a visitor from the Argentine, Dr. William P. Giles, was present, and Dr. Giles received the recognition of the House.

Remarks of Chairman of Committee on Distinguished Service Award

Dr. Edgar V. Allen, Chairman, addressed the House as follows: As the Chairman of the Committee on the Distinguished Service Award, I would like to call to the attention of the members of the House of Delegates an oversight on the part of the delegates. In the last two years, there have been but two nominations for the Distinguished Service Award, and, although those who have been nominated previously are kept on the list, the list, of necessity, gets a bit small. The committee believes that this is owing to an oversight and lack of knowledge on the part of the delegates that they may present appropriate nominations for the Distinguished Service Award.

Roll Call

The Secretary called the roll, and more than a quorum answered.

Presentation of Director of Joint Commission on Accreditation of Hospitals

Dr. Gunnar Gundersen, Trustee, presented to the House Dr. Edwin L. Crosby of Baltimore, introducing him as follows:

I am appearing here as a member of the Board, but, more importantly, as your representative on the Joint Commission on Accreditation of Hospitals and its chairman. As you know, the American Medical Association has a very vital stake in this commission, which is composed of 20 members, 6 representatives being from the American Medical Association. Consequently, 6/20th of the cost of this newly created Commission is our responsibility. I am happy to be able to present to you today the newly chosen director of that commission. For the purpose of making you acquainted with him, I have the great privilege of presenting to you Dr. Edwin L. Crosby, of Baltimore, our new director, who will take office and begin functioning on the first of September.

Supplementary Report of Board of Trustees on H.R. 7800

Dr. Dwight H. Murray, Chairman, received the unanimous consent of the House to present the following report, in the form of a resolution, which the House, by unanimous consent, voted to consider without referral to a reference committee:

WHEREAS, Congressman Doughton, on May 12, introduced in the Congress an omnibus measure, H.R. 7800, 82nd Congress, providing for various amendments to Title II of the Social Security Act, which bill was reported favorably by the Ways and Means Committee of the House of Representatives on May 16 and brought before the House of Representatives on May 19 under a suspension of the rules; and

WHEREAS, Section 3 of this measure provided for the introduction of a new theory in the Social Security program which, in its implementation, could result in the socialization of the medical profession, inasmuch as it would provide that the Federal Security Administrator would

(*a*) determine what constitutes permanent and total disability;

(*b*) establish the types of proof necessary to establish permanent and total disability;

(*c*) provide by regulation when and where physical examinations should be taken;

(*d*) be authorized to prescribe the examining physician or agency (including federal installations);

(*e*) establish the fees;

(*f*) be authorized to pay travel expenses and subsistence incident to the taking of such physical examinations; and

(*g*) have power to curtail Old Age and Survivors' insurance benefits because of noncompliance with regulations of this section; and

WHEREAS, The American Medical Association strongly protested against its adoption without full and complete hearings with respect to the controversial provisions of Section 3 of the bill; and

WHEREAS, Following the rejection of the bill on May 19 by the House of Representatives, certain amendments were made to the bill by the House Ways and Means Committee which purport to eliminate the objectionable features of Section 3; and

WHEREAS, Notwithstanding certain deletions from Section 3, the fundamental purpose of this bill to extend the power and authority of the Federal Security Administrator remains unchanged, and the deletions which have been made are only another attempt to hoodwink the public into believing the Section is completely altruistic; and

WHEREAS, The attempt is again being made to present this bill to the House of Representatives next Monday (June 16) under a suspension of the rules; and

WHEREAS, The defeat of H.R. 7800, depriving Social Security beneficiaries of numerous additional benefits was a direct result of the Truman administration's attempt to play politics by tying in a socialized medicine scheme with an otherwise popular measure; therefore be it

Resolved, That the American Medical Association condemns the breach of faith by the administration with those who would benefit from this bill in a flagrant attempt to railroad through a provision to aid in the socialization of medicine which could not possibly be adopted if considered openly and fairly.

Executive Session

On motion, duly seconded and carried by a vote of 91 to 53, the House of Delegates went into Executive Session for the purpose of considering the supplementary report of the Board of Trustees on H. R. 7800.

While the House was in Executive Session, the matter under consideration was discussed by the immediate Past President, the President, the Chairman and a member of the Board of Trustees, the secretary of the Committee on Legislation, the Director of the Washington Office and several delegates.

Regular Session

The House rose from Executive Session and the President, Dr. Louis H. Bauer, summarized the discussion therein, as follows:

Mr. Speaker, Members of the House: The House has risen from Executive Session. It has not taken any action as yet, as it was felt that that action should be taken in open session. It was also felt that those who were not present were entitled to hear the gist of what was said during the Executive Session, and in order not to take too much time, I shall endeavor to summarize the majority of the discussion made from the floor and what I said myself.

Much of the discussion was based on questions, because members of the House, I think, did not understand exactly the purport of this resolution. A part of the misunderstanding was, as I said a few minutes ago, in executive session, because they didn't hear the resolution due to all the noise that was going on.

May I make it clear that there has been no effort at any time to oppose the extension of the Social Security benefits under seven of the eight sections of the bill. There was only opposition to one section which provided for certain disability provisions. The original bill had this spelled out, gave authority to the Federal Security Administrator to carry out and implement this bill, and specified certain of the things which he could do. In the deletions, they deleted those specific functions but left in, of course, the provision that it was still under the jurisdiction of the Federal Security Administrator, and he could write those specific provisions under the general authority given to the Administrator to write rules and regulations, and he could either put the same

ones, or worse ones, in and you couldn't do very much about it. That was the reason for our opposition to that particular Section.

The bill was defeated. The American Medical Association, one person said, had been responsible for defeating it. But someone else stated that he didn't think that that was wholly true, that undoubtedly our opinion on this had had some weight, but he thought the majority of Congressmen, and I believe he was right in this, opposed this primarily because of the manner in which they were trying to push it through. In other words, instead of holding hearings on this and giving the public an opportunity to come down and testify for or against the provision, it was done in committee, was rushed into the House under a special rule which provided that the bill must be adopted, rejected or referred back to the Committee; no amendments would be permitted, no deletions would be permitted, and a total of 40 minutes' debate only would be allowed, 20 minutes for each side. This was done under the guise of its being an emergency measure. There was nothing emergency about it, and it was a distinct political trick to try to tie a provision, that would never in the world have been passed had it been standing by itself, to something else. They hoped they could pass it by tying it on to a bill which was otherwise popular.

I want to stress again the fact that the American Medical Association does not and has not opposed the increase of benefits to those receiving such benefits from Social Security. We do object to letting the Federal Security Administrator enlarge any of his powers in the field of medicine, and we object particularly to the manner in which the Administration tried to put this over.

The purport of this resolution is merely to condemn the Administration for trying to hoodwink the public, trying to put something over in an undemocratic fashion. It has not asked anybody to vote against anything. It is merely making our position clear.

After further discussion by many present, the following resolution, presented by Dr. Louis M. Orr II, Florida, as an amendment and addition to the original resolution presented in the supplementary report of the Board of Trustees, was adopted:

Resolved, That the American Medical Association urges that Congress refer this bill to the Committee where it should be subject to the ordinary democratic processes of legislation.

The original resolution, as amended, was then adopted.

Election of Officers

The following officers were elected:

President-Elect: Dr. Edward J. McCormick, Toledo, Ohio.

Vice President: Dr. Leo F. Schiff, Plattsburg, N. Y.

Secretary: Dr. George F. Lull, Chicago.

Treasurer: Dr. J. J. Moore, Chicago.

Speaker, House of Delegates: Dr. James R. Reuling, Bayside, N. Y.

Vice Speaker, House of Delegates: Dr. E. Vincent Askey, Los Angeles.

Members, Board of Trustees: Dr. Dwight H. Murray, Napa, Calif.; Dr. James R. McVay, Kansas City, Mo.

Member, Judicial Council: Dr. Homer L. Pearson Jr., Miami, Fla.

Member, Council on Scientific Assembly: Dr. Stanley P. Reimann, Philadelphia.

Members, Council on Medical Education and Hospitals: Dr. Herman G. Weiskotten, Skaneateles, N. Y.; Dr. John W. Cline, San Francisco; Dr. James M. Faulkner, Boston; Dr. Charles T. Stone Sr., Galveston, Texas; Dr. Leland S. McKittrick, Boston.

Members, Council on Medical Service: Dr. Elmer L. Hess, Erie, Pa.; Dr. Carlton E. Wertz, Buffalo, N. Y.; Dr. James Q. Graves, Monroe, La.

Member, Council on Constitution and By-Laws: Dr. James Stevenson, Tulsa, Okla.

Place of 1955 Annual Session

On recommendation of the Board of Trustees, the House of Delegates voted to accept the invitation to hold the Annual Session in Atlantic City, N. J., in 1955.

Election of Affiliate Members

On nomination by the Judicial Council:

Dr. Theodore F. Braun, Columbus, Ohio.

Dr. John A. Cremer, Dembi Dollo, Ethiopia.

Dr. Burton C. Dyson, Hamadan, Iran.

Dr. Ivanoel Gibbins, Ambala City, Punjab, India.

Dr. Paul Stayer Hoover, Bulsar, Surat District, India.

Dr. John F. Sheldon, Salisbury, Southern Rhodesia, Africa.

On nomination by the Section on Pathology and Physiology:

Fredrick Gudernatsch, Ph.D., Sc.D., New York.

Nominations for Associate Fellowship

Dr. George F. Lull, Secretary, presented the following statement:

Mr. Speaker: Nominations for Associate Fellowship have been received from several state medical associations. It has been impossible to process them in the headquarters office because of the uncertainty as to how the Constitution and By-Laws would be modified at this session. Since the By-Laws are now amended, making Associate Fellows Associate Members, I would ask that these nominations be deferred until the next meeting of the House of Delegates.

The House voted to defer election of Associate Members until the next session, when the nominations could be properly presented.

Address of President-Elect Edward J. McCormick

The newly elected President-Elect, Dr. Edward J. McCormick, was brought to the platform, and addressed the House as follows:

Mr. Speaker, President Bauer, Officers of the American Medical Association, Members of the House of Delegates, Ladies and Gentlemen: I am not much of a self-diagnostician. There is some question in my mind at the present moment as to whether I am suffering from hyperadrenalism or hyperthyroidism. My legs are a little feeble and somewhat weak. I recognize that you have conferred on me the greatest honor that can come to any man in medicine in the United States of America. I am not one to accept an honor lightly. I recognize the responsibility.

You have heard many excellent speeches during this meeting, including those by our Past President, Dr. Cline, and our present President, Dr. Bauer. It is not my intention, at the end of this rather long meeting, to bore you with any kind of a prepared speech. I simply want to say to you that I do recognize the responsibility that comes with the honor which you have so kindly given to me, and I want you to know that within my limitations I shall do everything in my power to discharge the responsibility and the obligation. I only hope that I am of sufficient stature to fit into the line of distinguished men who have held this office before me. I shall do my very, very best, and I hope that when I come to you with an accounting of my stewardship, I shall cause you to have a feeling of great satisfaction. I shall do everything in my power for American medicine and for the preservation of the democracy which has made this country the greatest country in the history of the world. Thank you so much.

Address of Dr. F. F. Borzell

Dr. F. F. Borzell, retiring Speaker, addressed the House:

Mr. Speaker and Members of the House of Delegates: I wish to take this opportunity before the more or less disorder that develops at the latter moments of the session to express to the House, as I conclude the afternoon's session and ring down the gavel on this 101st Session, my extreme appreciation for the courtesies that you have shown me, for the opportunity that you have given me to serve American medicine and the American Medical Association as your Speaker, and I wish for this House all of the good fortune possible. I hope it will maintain that same integrity, that same courageous, unswerving course of devotion toward American medicine it has shown in the past, and that you will prevent, by your activities, America from going anywhere but in the direction of liberty and freedom.

The House of Delegates gave Dr. Borzell a rising vote of thanks for his grand services to the House.

Vote of Thanks

A cordial greeting and message of thanks was extended to the Chicago Medical Society and the Illinois State Medical Society for the hospitality and fine treatment received.

The House adjourned sine die at 4:40 p. m., Thursday, June 12.

MEDICAL NEWS

ALABAMA

State Medical Election.—At its recent annual meeting in Montgomery the Medical Association of the State of Alabama installed Dr. Benjamin W. McNease of Fayette as president, Dr. James O. Morgan, Gadsden, as president-elect; and Dr. Douglas L. Cannon, Montgomery, secretary-treasurer.

Narcotic Violation.—Dr. Ambrose Tilden Grayson of Huntsville pleaded nolo contendere to a violation of title 26, U. S. C. sec. 2554, in the United States District Court at Birmingham on April 10. His sentence was suspended, and he was placed on probation for three years on condition that he surrender his special tax stamp and not re-register during the period of probation. He was fined $250.

Society News.—At the meeting of the Alabama Association of Pathologists, May 15, Dr. Charles R. Lafferty, Montgomery, was elected vice-president and not Dr. Earl B. Wert, Mobile, as previously announced.——At a recent meeting of the Alabama Radiological Society Dr. William D. Anderson of Tuscaloosa was elected president; Dr. Courtney S. Stickley, Montgomery, vice-president; and Dr. James A. Meadows Jr., Birmingham, secretary-treasurer.

CALIFORNIA

Cancer Class Open to Public.—A special course open to the public as well as to students and teachers attending the regular summer session at the college on the social, biological, and health problems of cancer will be offered at Mills College, Oakland. No academic requirements have been set as a prerequisite for taking the course. The course is being given in cooperation with the California division of the American Cancer Society. It will include six lectures, the first of which will be delivered on July 7 by Dr. Michael B. Shimkin, director of the University of California laboratory of experimental oncology.

University News.—John F. Kessel, Ph.D., professor of infectious diseases, Medical School on the Los Angeles campus of the University of California, has returned after spending six months in field studies at the Institut des Recherches Médicales de l'Océanie Française in Tahiti. The university's Pacific Tropic Disease Research Project is engaged in a cooperative research program with the French government at the institute.——Richard J. Winzler, Ph.D., professor of biochemistry and nutrition at the University of Southern California School of Medicine, has accepted appointment as professor and head of the department of biological chemistry at the University of Illinois College of Medicine, Chicago.

COLORADO

Service Awards to Professors.—Five professors were given 25 year service awards at the annual meeting of the University of Colorado Medical Alumni Association, June 6. Following were the recipients of the awards:

Ralph W. Danielson, head of the division of ophthalmology.
Daniel R. Higbee, head of the division of urology.
Douglas W. Macomber, head of the division of plastic surgery.
Roderick J. McDonald, assistant clinical professor of pediatrics.
Osgoode S. Philpott, clinical professor of dermatology and syphilology.

The association elected Dr. McDonald president and Dr. Oscar T. Clagett of the Mayo Foundation in Rochester, Minn., vice-president. Dr. Edward R. Mugrage was reelected secretary-treasurer, and Dr. John H. Amesse was named as his assistant.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting

CONNECTICUT

Dr. Lippard Appointed Dean at Yale.—Dr. Vernon W. Lippard became dean of the Yale University School of Medicine, New Haven, on July 1, returning to his alma mater from the University of Virginia, Charlottesville, where he has been dean of the department of medicine since 1949. From 1946 to 1949 he was dean of the Louisiana State University School of Medicine in New Orleans and from 1939 to 1946 associate dean of the Columbia University College of Physicians and Surgeons, New York. Dr. Lippard succeeds Dr. C. N. Hugh Long, who is giving up administrative duties to devote full time to research in physiology and as chairman of the department of physiology. A member of the faculty since 1936, when he came to Yale as professor of physiological chemistry and chairman of that department, Dr. Long was appointed dean of the School of Medicine in 1947. He had previously taught at the University College in London, England, and at McGill University Faculty of Medicine, Montreal, Canada, and had served as director of the George S. Cox Medical Research Institute at the University of Pennsylvania, Philadelphia.

ILLINOIS

Society Elections.—At the May 24 meeting of the Illinois Psychiatric Society Dr. Jules H. Masserman, Chicago, was elected president; Dr. Alfred P. Bay, Manteno, Ill., vice-president; Dr. Edward J. Kelleher, Chicago, secretary-treasurer; and Drs. William H. Haines and Percival Bailey, both of Chicago, councilors.

Decline in Tuberculosis Deaths.—Seven Illinois counties (Boone, Calhoun, DeWitt, Edwards, Henderson, JoDaviess, and Moultrie) reported no deaths from tuberculosis during 1951. The tuberculosis mortality rate for the state as a whole was the lowest in Illinois history, 21.3 per 100,000 population. About 65% (1,232 fatalities) of the Illinois deaths were reported from Chicago; this is a mortality rate of 33.6 per 100,000 in contrast to the rate of 12.7 downstate.

Chicago

Personals.—Dr. Florian E. Schmidt was recently appointed medical director of the Chicago Heart Association.——Dr. Isidore Snapper, clinical professor of medicine at Columbia University College of Physicians and Surgeons, New York, has accepted the position of director of medical education at Cook County Hospital and professor of medicine at the Cook County Graduate School of Medicine, Chicago, effective about Oct. 1.

Society News.—The North Shore Branch of the Chicago Medical Society will hold its annual golf tournament Aug. 27 at Bunker Hill Golf Club, 6635 Milwaukee Ave. (phone NIles 9890).——At a recent meeting of the Chicago Psychoanalytic Society Dr. Hugh T. Carmichael was elected president; Dr. Lucia E. Tower, vice-president; Dr. Louis B. Shapiro, secretary; and Dr. Joan Fleming, treasurer.——At the annual meeting of the Metropolitan Dermatological Society of Chicago, May 14, the following officers were elected: Dr. Rudolph Lackenbacher, president; Dr. Franz Baumann, vice-president; and Dr. Tibor Benedek, secretary-treasurer.

KANSAS

Appointment at Menninger Foundation.—Dr. Cotter Hirschberg, professor of child psychiatry, University of Colorado Medical Center, Denver, and director of the center's mental hygiene and child guidance clinic, has been appointed director of the department of child psychiatry, including the Southard School, at the Menninger Foundation, Topeka. He succeeds Dr. Edward D. Greenwood, who is now a special assistant to Dr. William C. Menninger and a consultant in child psychiatry.

KENTUCKY

Kentucky Centennial Volume.—The volume entitled "Papers Presented Before the Ephraim McDowell Memorial Meeting, Centennial of the Kentucky State Medical Association" has been published. Edited by Dr. Emmet Field Horine of Brooks, association historian, it depicts the progress of the state medical association and its relation to medical advances in the past 100 years, and includes pictures of past presidents and secretaries and a sketch of Dr. Ephraim McDowell. Papers presented at the meeting by physicians born or educated in Kentucky, together with their biographical sketches and pictures, are also incorporated.

Personals.—Dr. Carlisle Morse, Louisville, has been appointed a member of the Committee on Diabetes Detection and Education of the American Diabetes Association.——Dr. William R. Miner, Covington, was installed as president of the Southeastern Urological Society at its annual meeting in Florida recently.——Dr. Rudolph J. Noer, associate professor of surgery and assistant dean at Wayne University School of Medicine, Detroit, will assume his duties as head of the department of surgery of the University of Louisville School of Medicine, Sept. 1, at which time he will also become chief of surgery of the Louisville General Hospital. Dr. Noer replaces Dr. R. Arnold Griswold, whose resignation became effective July 1.

MASSACHUSETTS

Phi Chi Lecture.—Dr. Harold D. Levine, clinical associate in medicine at Harvard Medical School, Boston, delivered the annual Phi Chi Lecture at the Medical College of Virginia, Richmond, on May 9, on "The Nonspecificity of the Electrocardiogram Associated with Coronary Artery Disease."

Dr. Clarke Appointed Fulbright Professor.—Dr. Charles Walter Clarke, executive director, American Social Hygiene Association, has been appointed a Fulbright professor and will teach the 1952-1953 school year at the University of the Philippines, Manila. Dr. Clarke, who joined the American Social Hygiene Association at its inception in 1914, has served successively as field secretary, European representative, medical director, and executive director. He has served as field representative for the League of Nations and director of health education for the League of Red Cross Societies, with headquarters in Geneva, as consultant to the U. S. Office of Indian Affairs and the New York State Department of Health, and has been vice-president of the National Health Council, member of the National Research Council's committee on venereal diseases, and associate editor of the *American Journal of Syphilis, Gonorrhea and Venereal Diseases.*

MICHIGAN

Fluoride Applications to Children's Teeth.—Sodium fluoride applications to prevent tooth decay will be given to approximately 12,000 children in 68 communities in the state this summer in a special self-supporting program under the auspices of the Michigan Department of Health and utilizing the services of 23 junior dental and dental hygiene students from the University of Michigan. Children in the participating communities will be offered the protective treatments at a minimal charge, which will be used to defray living expenses of the university students and to purchase supplies. Children not able to pay may receive the treatment free.

Annual Conference on Aging.—"Housing the Aging" is the topic for the University of Michigan Fifth Annual Conference on Aging to be held in Ann Arbor, July 24-26. The conference will consider the housing needs of healthy, chronically ill, confused, and disabled older persons. Co-sponsors of the conference include the Institute for Human Adjustment, schools of architecture, business administration, social work, and public health and the Medical School, Extension Service, and summer session of the University of Michigan; the Michigan State Medical Society; the Committee on Aging and Geriatrics of the Federal Security Agency, Washington, D. C.; and the Housing and Home Finance Agency, Washington, D. C. Conference registration materials may be obtained by writing to Wilma Donahue, Ph.D., Institute for Human Adjustment, Rm. 1510, Rackham Bldg., Ann Arbor.

MINNESOTA

Cancer Control Award.—Dr. Elexious T. Bell, emeritus professor of pathology at the University of Minnesota Medical School, Minneapolis, was recently presented with a medal and citation by the Minnesota Division of the American Cancer Society for his outstanding service in cancer control. Dr. Bell, who joined the university faculty in 1910 and retired as chief of the department of pathology in 1949, is continuing his research in the university laboratory.

MISSOURI

Evarts Graham Honored.—Washington University, St. Louis, on June 11 awarded an honorary degree of doctor of laws to Dr. Evarts A. Graham, now professor emeritus, who for 32 years was Bixby Professor of Surgery at the university. Dr. Graham was cited as "the first physician to cure successfully a patient with cancer of the lung by a one-stage removal of the diseased lung," and for opening "an entirely new approach to the diagnosis of disease through his method of visualizing the gallbladder."

NEW YORK

Blood Banks Association Election.—At its first annual meeting May 12 in New York the Blood Banks Association of New York State elected Dr. Jacob Geiger, Manhattan, president; Dr. Ernest Witebsky, Buffalo, vice-president; Dr. Morris Maslon, Glens Falls, treasurer; and Dr. Robert S. Jenks, Batavia, secretary.

County Survey of Medical Resources.—The Suffolk County Medical Society has announced a plan for a county-wide survey of medical resources. The survey, conducted by the public relations committee, of which Dr. Wilhelm G. Hansen, Babylon, is chairman, will attempt to ascertain (1) how medical facilities in Suffolk County compare with similar areas throughout the country; (2) how to improve local medical facilities where necessary; and (3) how to insure that existing medical facilities are used most efficiently.

State Medical Election.—At its annual meeting in New York May 12-16 the Medical Society of the State of New York elected Dr. Edward T. Wentworth of Rochester president; Dr. Andrew A. Eggston, Westchester, president-elect; Dr. John L. Edwards, Hudson, vice-president; and Dr. Alfred P. Ingegno, Brooklyn, assistant secretary. Reelected were Drs. Walter P. Anderton, New York, secretary; Maurice J. Dattelbaum, Brooklyn, treasurer; Thomas M. d'Angelo, Flushing, assistant treasurer; Frederic W. Holcomb, Kingston, speaker of the house of delegates; and Frederick W. Williams, New York, vice-speaker.

New York City

Personals.—Dr. William C. Spring Jr., recently appointed DeLamar Professor of Public Health Practice at Columbia University School of Public Health, has resigned as commissioner of health of the Tompkins County Department of Health, Ithaca, which he organized in 1947.——Dr. Leonard J. Goldwater, professor of occupational medicine, School of Public Health, Columbia University, is spending three months in Europe as a consultant for the World Health Organization. He will advise governmental and educational agencies in Yugoslavia and Finland, and will return to Columbia in September.

Van Etten Hospital.—The cornerstone was laid for the Nathan B. Van Etten Hospital at Pelham Parkway and Eastchester Road on May 13. This tuberculosis hospital is the first unit of the Bronx Municipal Hospital Center. Dr. Van Etten, in whose honor the hospital is named, was President of the American Medical Association in 1940-1941. In delivering the principal address at the ceremony, Dr. Abraham J. Fleischer, president of the Bronx County Medical Society, referred to Dr. Van Etten as, "Eighty-six years old, 60 years in medicine, humanitarian, philanthropist, churchman, doctor, teacher, organizer of hospitals, first president of the Bronx County Medical Society, past president of the Medical Society of the State of New York,

the only Bronx physician to attain the high office of President of the American Medical Association, still working, still looking to the dawn of tomorrow for a healthier, better world."

TENNESSEE

Tribute to Dr. Leake.—In appreciation of Dr. Nolan E. Leake's 31 year association with the Baptist Memorial Hospital, Memphis, the staff recently presented him with an automobile. Dr. Leake came to the hospital as pathologist in 1921. Since January of this year he has been on the staff of physicians at the Mid-South Blood Center, while continuing at the hospital as pathologist emeritus.

Flies and Poliomyelitis.—Dr. Charles D. Boyd, research fellow in virus diseases at Baylor University College of Medicine, Houston, is said to have shown that flies caught in the Houston area in April carried the polio virus. As a result the city and county officials and health leaders have planned a sustained campaign against flies. Dr. Boyd's research is said to have revealed that the flies were polio virus carriers at a time when there was no epidemic of polio in that community.

VIRGINIA

Alumni Dinner.—The annual Medical College of Virginia Alumni dinner will be held at The Greenbrier in White Sulphur Springs, W. Va., July 24, during the annual meeting of the West Virginia State Medical Association. Guest speakers will be Dr. H. Hudnall Ware, Richmond, president of the alumni association, and Dr. John B. Truslow, dean of the School of Medicine, Medical College of Virginia, Richmond. According to Dr. John T. Jarrett, Charleston, president of the West Virginia Alumni chapter, there will be no charge for the dinner other than the prevailing American plan rate paid by all registered guests. The social hour will be on a subscription basis, with tickets available at $2.50 per person at the registration desk.

WASHINGTON

Course for Medical Secretaries.—Beginning with the 1952 fall semester, Holy Names College, Spokane, will inaugurate a two year college course for medical secretaries. Anyone interested may contact Sister Frances Zavier at the college administration office.

WEST VIRGINIA

Regional Meeting of College of Physicians.—The first regional meeting of the West Virginia Chapter of the American College of Physicians to be held in the state will convene July 25 at the Greenbrier Hotel in White Sulphur Springs, with Dr. Paul H. Revercomb of Charleston presiding. The subject of "space medicine" will be discussed by the newly installed president of the American Medical Association, Dr. Louis H. Bauer of Hempstead, N. Y. Dr. Charles M. Caravati, Richmond, assistant professor of clinical medicine at the Medical College of Virginia, Richmond, will speak on "Jaundice, Its Clinical Interpretation," and Dr. Alphonse McMahon, associate professor of internal medicine, St. Louis University School of Medicine, will discuss hypercholesterolemia. Dr. T. Grier Miller, Philadelphia, president of the American College of Physicians, will deliver the principal address at the dinner.

Community Health Councils.—The West Virginia Public Health Association has adopted as its main project for 1952-1953 the promotion of community health councils. The project committee, which will serve in an advisory capacity to local groups, consists of Fred J. Holter, Ph.D., Morgantown, recently appointed health education consultant to the state department of health; Dr. William H. Riheldaffer, Charleston, United Mine Workers area medical administrator, and Mr. H. A. Stroud, Fairmont, of the division of public relations, Monongahela Power Company. Mr. Charles Lively, Charleston, executive secretary of the West Virginia State Medical Association, was named consultant to the group.

The services of Dr. Holter, as health education consultant, are available on a part-time basis to areas requesting information concerning the development of community health councils. Community health councils have already been organized in Mingo, Monongalia, and McDowell counties.

WYOMING

State Medical Meeting and Election.—The Wyoming State Medical Society held its annual meeting and election at Lander June 5-7, under the presidency of Dr. Paul R. Holtz of Lander. Out-of-state speakers included Drs. Kenneth C. Sawyer, Charles G. Freed, George P. Lingenfelter, Daniel R. Higbee, and Henry M. Morfit, Denver; Drs. George B. Ely and Preston R. Cutler, Salt Lake City; Dr. Evan W. Thomas, New York; and Dr. Charles McLaughlin, Omaha. On Thursday the following officers were elected: Dr. Edward J. Guilfoyle, Newcastle, president; Dr. James W. Sampson, Sheridan, president-elect; Dr. Bernard J. Sullivan, Laramie, vice-president; Dr. Peter M. Schunk, Sheridan, treasurer; Dr. Glenn W. Koford, Cheyenne, secretary; Dr. W. Andrew Bunten, Cheyenne, delegate to the American Medical Association; Dr. George H. Phelps, Cheyenne, alternate delegate to the American Medical Association; and Mr. Arthur Abbey, Cheyenne, executive secretary.

GENERAL

Society Elections.—At the annual meeting of the American Diabetes Association in Chicago, June 7-8, Dr. Frank N. Allan, Boston, was elected president; Dr. John A. Reed, Washington, D. C., secretary; and Dr. William H. Olmsted, St. Louis, treasurer.——At the annual meeting of the Society for Investigative Dermatology, held in Chicago, June 7-8, Dr. Theodore Cornbleet, Chicago, was elected president and Dr. Walter C. Lobitz Jr., Hanover, N. H., vice-president.

Congress on Chest Diseases.—The Twelfth Congress of the International Union Against Tuberculosis and the Second International Congress on Diseases of the Chest, sponsored by the Council on International Affairs, American College of Chest Physicians, will be held in Rio de Janeiro, Brazil, Aug. 24-30 under the presidency of Prof. Manoel de Abreu, Rio de Janeiro. The program lists 42 papers, and names 29 participants from the United States. The Council on International Affairs of the College and a number of committees serving under the council will meet in Rio de Janeiro during the week of the congresses. The governors and regents of the college will also hold their biannual meeting at that time. Following the close of the congresses in Rio de Janeiro there will be a tour of São Paulo, Brazil, where a program is being arranged by the South Brazilian Chapter of the college.

A scientific program on diseases of the chest will be presented on the airplane as persons attending are flying to Rio de Janeiro. Arrangements for this flying congress have been made with Pan American World Airways on their stratocruiser "El Presidente," leaving New York Aug. 21 at 11 a. m. Actual flying time to Rio de Janeiro is 19 hours. The round trip fare, New York City to Rio de Janeiro, is $848. A limited number of sleeping berths are available at a cost of $15 each way.

Outbreaks of Communicable Diseases.—According to the U. S. Public Health Service, the following outbreaks of communicable diseases have been reported for the week ended May 31:

Rocky Mountain Spotted Fever.—Thirteen cases of Rocky Mountain spotted fever were reported, all in the South Atlantic and Mountain States. The largest number, 5, was in Virginia, and 2 cases each occurred in North Carolina, Idaho, and Wyoming. Single cases were reported in Maryland and Colorado. The first fatal case of Rocky Mountain spotted fever in Minnesota has been reported in an 8-year-old boy.

Colorado Tick Fever.—An outbreak of illness has been reported among a group of Basque sheepherders in Elko County, Nev. The clinical diagnosis was Colorado tick fever in six persons and Rocky Mountain spotted fever in two others. Two cases of Colorado tick fever have been confirmed and one case of Q fever was also diagnosed. Investigation has not yet been completed.

Typhoid.—Preliminary report has been made of an outbreak of typhoid in Tioga County, New York, about the middle of May. The incident occurred among 19 persons who ate at a restaurant.

Gastroenteritis.—The Massachusetts Department of Public Health reports an outbreak of food poisoning among five persons about three and one-half hours after they had eaten custard-cream-filled tarts and cream puffs. Laboratory examination showed Staphylococcus aureus in the food.

Poliomyelitis Report.—A total of 421 cases of poliomyelitis was reported in the United States for the week ended June 21. This represents an increase of 43% over the number of cases (295) for the previous week. More than half of this increase was attributed to the increase in Texas, from 103 cases to 146; California, 40 to 53; Ohio, 7 to 18; New York, 5 to 15; and Iowa, 8 to 16. The incidence decreased slightly in Louisiana and Florida, from 18 to 17 cases and 15 to 12 cases, respectively. In Mississippi the increase was from 15 to 21 cases. The cumulative total of poliomyelitis cases for the "disease year" is 1,780 as compared with 1,190 for the corresponding period last year. Since the seasonal low week late in March through the week ended June 14, Texas has reported 467 cases, of which 92 were in Harris County. For the corresponding period last year this county reported 36. There are four other counties in Texas that show an increase over the number for last year during this period. They are as follows (1951 figures in parentheses): Bexar, 36 (12); Dallas, 31 (12); Jefferson, 23 (7); and Webb, 13 (1). Two counties, Nueces, 34 (40), and Tarrant, 18 (21), reported fewer cases for this period than for last year. Although the figures are not available for the counties in California the indications are that the cumulative total since the low week through the week ended June 14 will be lower than the 76 cases for this period in 1951. In Florida, Louisiana, and Mississippi, where large numbers of cases have been reported for the past few weeks, there is no indication as yet of any concentration of cases. For the other states reporting large numbers for the week ended June 21 the county breakdown will not be available until later.

LATIN AMERICA

Public Health Meeting.—The First Inter-American Congress of Public Health will be held at the Valdés Rodríguez School, Havana, Cuba, Sept. 26 to Oct. 1 to commemorate the 50th anniversary of the Pan-American Sanitary Bureau and to pay homage to Carlos J. Finlay.

On Monday at 2:30 p. m. there will be a symposium on yellow fever. On Tuesday four symposiums will be held on public health education, rabies and brucellosis, tuberculosis, and maternal and child health. On Wednesday roundtables will be held on malaria, chagas disease, schistosomiasis, and onchocerciasis.

Hematology Conference.—The International Congress of Hematology will meet in Mar del Plata, Argentina, Sept. 21-28 under the presidency of Dr. Alfredo Pavlovsky, Buenos Aires. The sessions will be preceded by a preliminary meeting, Sept. 20, in the National Academy of Medicine, Melo 3081, Buenos Aires. The day will be devoted to symposiums on hemophilia, and roundtable discussions. A reception will be held in the evening by the Argentine Society of Hematology and Hemotherapy. On Sunday a special train will take members of the congress on the six hour trip to Mar del Plata. Sunday evening a dinner dance will be held at the Hotel Provincial after formal opening of the congress. Subjects to be discussed during the sessions are as follows:

Neuroendocrine Regulation of Hematopoiesis and Hemostasis.
Polycythemia.
Leukemias, Etiology and Treatment.
Radiation Injury to the Hemopoietic Organs and Hemostasis.
Histochemistry and Cellular Ultrastructure.
Diagnosis of the Hemolytic Disease. Treatment of the Hemolytic Disease of the Newborn. Relations Between Immunology and Hematology.

The Hotel Provincial will be the official headquarters of the delegates and members of the society. Headquarters of the congress are at Anchorena 1710, Buenos Aires, Argentina. The secretary-treasurer is Dr. Carlos Reussi, Venezuela 1580, Buenos Aires, Argentina.

FOREIGN

Geographical Pathologists Meet in Belgium.—The International Conference of Geographical Pathology will be held in Liège, Belgium, July 15-18 under the presidency of Prof. J. Firket. The following program will be given:

F. O. Mac Callum, London, Hepatitis—Epidemiology.
Bernard A. Briody, New Haven, Conn., Viral Hepatitis.
A. Werthemann, Basel, General Report on Pathology of Subacute and Chronic Hepatitis Including Endemic Malignant Hepatitis.
F. Buchner, Freiburg i. Br., Pathology of Uncomplicated Reversible Virus Hepatitis.
S. Sherlock, London, Biochemical Aspects of Acute Hepatitis.
C. E. De Langen, Utrecht, Clinical Aspects of Hepatitis.
R. Cachera, Paris, Clinic on Hepatitis.
R. Jaffe, Caracas, Hepatitis Parasitaria.
S. Rubarth, Stockholm, Hepatitis in Veterinary Medicine.

The secretary of the conference is Dr. H. Betts, Institut de Pathologie, 1 rue des Bonnes, Villes, Liège, Belgium. Rooms can be booked in hotels either through the nearest Cook Travel Agency or at Wagons-Lits Cook, 43 Rue Pont d'Ile, Liège.

MEETINGS

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Anchorage, Aug. 21-23. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

AMERICAN CONGRESS OF PHYSICAL MEDICINE, Roosevelt Hotel, New York, Aug. 25-29. Dr. Frances Baker, One Tilton Ave., San Mateo, Calif., Secretary.

NATIONAL MEDICAL ASSOCIATION, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

NEVADA STATE MEDICAL ASSOCIATION, Reno, Aug. 21-23. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

POST GRADUATE MEDICAL ASSEMBLY OF SOUTH TEXAS, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

RENO SURGICAL SOCIETY CONFERENCE, Reno, Nevada, Aug. 21-23. Dr. Olin C. Moulton, 130 N. Virginia St., Reno, Nevada, Chairman.

ROCKY MOUNTAIN CANCER CONFERENCE, Shirley-Savoy Hotel, Denver, July 9-10. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2.

ROCKY MOUNTAIN RADIOLOGICAL SOCIETY, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

AMERICAN CONGRESS ON INDUSTRIAL MEDICINE, Rio de Janeiro, Brazil, Sept. 20-28.

AUSTRALASIAN MEDICAL CONGRESS, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

CONGRESS OF THE INTERNATIONAL DIABETES FEDERATION, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

EUROPEAN CONGRESS OF CARDIOLOGY, University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

EUROPEAN SOCIETY OF CARDIOVASCULAR SURGERY, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

INTERAMERICAN CARDIOLOGICAL CONGRESS, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

INTER-AMERICAN CONGRESS OF PUBLIC HEALTH, Havana, Cuba. Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6°, France, Secretary.

INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

INTERNATIONAL CONGRESS OF DIETETICS, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

INTERNATIONAL CONGRESS OF HAEMATOLOGY, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Nice-Cannes, France, and Monaco, Sept. 8-14. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

INTERNATIONAL CONGRESS ON HYDATID DISEASE, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

INTERNATIONAL CONGRESS ON MEDICAL RECORDS, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Montevideo, Uruguay, March 1-7. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y Mariano Moreno, Montevideo, Uruguay, Secretariat of the Congress.

INTERNATIONAL CONGRESS ON NEUROPATHOLOGY, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

INTERNATIONAL CONGRESS OF OTORHINOLARYNGOLOGY, Amsterdam, Netherlands, June 8-15. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

INTERNATIONAL CONGRESS OF PHYSIOPATHOLOGY OF ANIMAL REPRODUCTION AND ARTIFICIAL INSEMINATION, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

INTERNATIONAL CONGRESS OF UROLOGY, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

INTERNATIONAL HOSPITAL CONGRESS, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

INTERNATIONAL NEUROLOGICAL REUNION, Paris, France, July 8-9. M. Jean Sigwald, 68 Boulevard de Courcelles, Paris 17e, France.

INTERNATIONAL SOCIETY OF GEOGRAPHIC PATHOLOGY, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

INTERNATIONAL UNION AGAINST TUBERCULOSIS, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

NEURORADIOLOGIC SYMPOSIUM, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

WORLD CONGRESS OF JEWISH PHYSICIANS, Jerusalem, Israel, Aug. 10-14. Secretariat: % Israel Medical Association, Rehov Mesilat Yesharim, Beth Kovatz, Jerusalem, Israel.

WORLD CONGRESS OF MEDICINE, Montecatini, Italy, Oct. 16-18. Secretariat: Corso Trieste, 65, Rome, Italy.

WORLD FEDERATION OF MENTAL HEALTH, Brussels, Belgium, Aug. 25-Sept. 1.

WORLD MEDICAL ASSOCIATION, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALASKA:* *Examination.* Juneau. On application in other towns where there are board members. *Reciprocity.* On application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

ARIZONA:* *Examination.* Phoenix, July 15-17. *Reciprocity.* July 19. Sec., Dr. J. H. Patterson, 316 W. McDowell St., Phoenix.

CALIFORNIA: *Written.* Los Angeles, Aug. 18-21; Sacramento, Oct. 20-23. Application must be received at least two weeks prior to date of examination. *Oral for Reciprocity Applicants.* Los Angeles, Aug. 16; San Francisco, Nov. 8. Applicants are requested not to arrange to come to an oral examination until they receive notice from the Credentials Committee. *Oral and Clinical for Foreign Medical School Graduates.* Los Angeles, Aug. 17; San Francisco, Nov. 9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento.

COLORADO:* *Reciprocity.* Denver, July 8. Applications accepted through June 9. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver.

CONNECTICUT:* *Regular. Examination.* Hartford, July 8-9. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, July 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: DOVER, July 8-10. Sec., Dr. Joseph S. McDaniel, 229 South State St., Dover.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. Austin W. Matthis, Agana.

HAWAII: *Examination.* Honolulu, July 14-17. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, July 14-16. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

ILLINOIS: *Examination.* Chicago, Sept. 23-25. Supt. of Regis., Mr. Charles F. Kervin, Capitol Bldg., Springfield.

MAINE: Augusta, July 8-9. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, July 8-11. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

MISSOURI: *Reciprocity.* Jefferson City, July 27. Ex. Sec., Mr. John A. Hailey, Box 4, State Capitol Bldg., Jefferson City.

MONTANA: Helena, Oct. 6-8. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEVADA:* Carson City, Aug. 4. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 10. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NORTH CAROLINA: *Reciprocity.* Raleigh, Aug. 2. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, July 9-11. *Reciprocity.* Grand Forks, July 12. Sec., Dr. C. J. Glaspel, Grafton.

OREGON:* *Examination.* Portland, July 7-9. *Reciprocity.* Portland, July 25-26. Final date for filing application was June 16. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, July 8-10. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: *Examination.* Providence, July 2-3. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA:* Rapid City, July 15. Sec., Dr. C. B. McVay, Yankton Clinic, Yankton.

TEXAS: *Reciprocity.* Fort Worth, Aug. 3. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

UTAH: *Examination.* Salt Lake City, July 9-11. *Reciprocity.* Salt Lake City, June 20. Asst. Dir., Mr. Frank E. Lees, 314 State Capitol Bldg., Salt Lake City 1.

WASHINGTON:* Seattle, July 14-16. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

WEST VIRGINIA: Charleston, July 7-9. Sec., Dr. N. H. Dyer, State Office Bldg., No. 3, Charleston 5.

WISCONSIN:* Milwaukee, July 8-10. Sec., Dr. A. G. Koehler, 46 Washington Blvd., Oshkosh.

WYOMING: Cheyenne, Oct. 6. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: *Examination.* On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

COLORADO: *Examination.* Denver, Sept. 10-11. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 20-21. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

IOWA: *Examination.* Des Moines, July 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Oct. 10-11. Sec., Mrs. Anne Baker, 423 W. Michigan Ave., Lansing.

NEBRASKA: *Examination.* Omaha, Oct. 7-8. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NEVADA: *Examination.* Reno, July 8. *Reciprocity.* On application. Sec., Mr. Frank Richardson, University of Nevada, Reno.

OKLAHOMA: *Examination.* Oklahoma City, Sept. 13. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 6 and Dec. 6. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Aug. 13. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

TENNESSEE: *Examination.* Memphis, July 2-3. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

TEXAS: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WASHINGTON: *Examination.* Seattle, July 9-10. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

WISCONSIN: *Examination.* Madison, Sept. 13, Milwaukee, Dec. 6. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

* Basic Science Certificate required.

DEATHS

Denton, William ⊕ Colonel, U. S. Army, retired, Port Jervis, N. Y.; born Sept. 19, 1885; Cornell University Medical College, New York, 1908; Army Medical School, 1911; entered the medical corps of the regular U. S. Army March 29, 1911, as a first lieutenant; served in World Wars I and II, having been awarded the Legion of Merit in the last war; in foreign service in France and England during World War I; served in the Philippines and Puerto Rico and at many posts in continental United States; rose through the ranks to that of colonel March 15, 1937; retired Aug. 31, 1946; died March 13, aged 66, of ruptured aneurysm and generalized arteriosclerosis.

Davis, Edward Lowndes, Berwick, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; served overseas during World War I; veteran of the Spanish-American War; a brigadier general in the Pennsylvania National Guard; an organizer of the National Guard in Berwick; the building known as Davis Armory was named for him at impressive ceremonies held on Nov. 19, 1938; member of the American Medical Association; past president and vice-president of the Columbia County Medical Society; affiliated with Berwick Hospital; died April 19, aged 77, of cerebral thrombosis.

Howes, William Edward ⊕ Honolulu, Hawaii; University of Michigan Medical School, Ann Arbor, 1919; member of the Medical Society of the State of New York, American Roentgen Ray Society, Radiological Society of North America, and the American College of Radiology; specialist certified by the American Board of Radiology; served during World War II; formerly practiced in Brooklyn, where he served on the staff of the Brooklyn Cancer Institute and Carson C. Peck Memorial and Lutheran hospitals; died April 4, aged 57, of embolism following an operation.

Adams, Edward Nolan, Tyler, Texas; University of Georgia Medical Department, Augusta, 1931; served during World War II; affiliated with Mother Frances Hospital; died April 5, aged 49, of coronary occlusion.

Anderson, Charles Willoughby, Bishop, Calif.; McGill University Faculty of Medicine, Montreal, Canada, 1903; died April 7, aged 72, of heart disease.

Angell, Charles Augustus, Des Moines, Iowa; Rush Medical College, Chicago, 1931; member of the American Medical Association; served during World War II; affiliated with Iowa Lutheran and Mercy hospitals; died April 13, aged 51, of coronary thrombosis.

Atkinson, Edward Broadus, Cane Valley, Ky.; Kentucky School of Medicine, Louisville, 1896; died April 25, aged 83, of cerebral hemorrhage.

Bard, George Percival, Crescent, Ga.; New York Homeopathic Medical College and Hospital, New York, 1900; formerly affiliated with Cyril and Julia C. Johnson Memorial Hospital in Stafford Springs, Conn.; died April 1, aged 79, of aortic insufficiency.

Basney, Sterling Custus ⊕ Wellsboro, Pa.; Medico-Chirurgical College of Philadelphia, 1910; past president of Tioga County Medical Association; on the staff of the Soldiers and Sailors Memorial Hospital; an examining physician of the Pennsylvania Railroad Company in Philadelphia; died April 1, aged 66, of brain tumor.

Black, Walter Wright, Oswego, Ore.; University of Oregon Medical School, Portland, 1916; specialist certified by the American Board of Proctology; member of the American Proctologic Society; formerly practiced in Portland, where he was affiliated with Emanuel Hospital; died in Friday Harbor, Wash., April 10, aged 66, of coronary occlusion.

⊕ Indicates Fellow of the American Medical Association.

Blanchard, Alexander Steven ⊕ Williston, S. C.; Medical College of Georgia, Augusta, 1914; served during World War I; mayor of Williston for three terms; died in Columbia April 8, aged 63, of perirectal abscess, diabetes mellitus and arteriosclerosis.

Boylan, Peter Clement ⊕ Cleveland Heights, Ohio; Jefferson Medical College of Philadelphia, 1927; served during World War II; affiliated with Huron Road Hospital in East Cleveland and St. Vincent Charity Hospital in Cleveland, where he died April 21, aged 54, of cirrhosis of the liver with esophageal varices and ulcerative colitis.

Brancheau, Lynus Theodore, Petersburg, Mich.; Wayne University College of Medicine, Detroit, 1936; member of the American Medical Association; served during World War II; died in Mercy Hospital, Monroe, April 20, aged 46, of carcinoma of the lung.

Burns, Thomas Francis ⊕ Fall River, Mass.; Jefferson Medical College of Philadelphia, 1912; served as city physician, chairman of the maternal and child health commission, and chairman of the board of health; affiliated with Fall River, Union, and St. Anne's hospitals; died April 23, aged 61, of cerebral hemorrhage and hypertension.

Burrage, Thomas Jayne, Portland, Maine; Harvard Medical School, Boston, 1903; member of the American Medical Association; served overseas during World War I; on the local Selective Service Board during World War II; died in Maine General Hospital April 18, aged 76.

Campbell, Oscar Clayman, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1898; died in the Graduate Hospital of the University of Pennsylvania April 14, aged 75, of heart disease.

Clark, Martha E., Omaha; the Hahnemann Medical College and Hospital, Chicago, 1897; died April 11, aged 95, of a fractured hip.

Convery, Robert Ambrose, Bradley Beach, N. J.; Harvard Medical School, Boston, 1926; died in Pine Haven Sanitarium in Pinewald March 16, aged 54, of cerebral embolism and arteriosclerosis.

Conway, Francis, St. Louis; St. Louis College of Physicians and Surgeons, 1921; member of the American Medical Association; served during World War I; died in Veterans Administration Hospital, Jefferson Barracks, Mo., April 4, aged 62, of carcinoma of the right kidney with metastasis to the liver.

Corley, John Percell, Greensboro, Ala.; University of the South Medical Department, Sewanee, Tenn., 1899; also a dentist; died recently, aged 82, of coronary thrombosis and arterial hypertension.

Crane, Ralph William, Stamford, Conn.; Yale University School of Medicine, New Haven, 1905; member of the American Medical Association; past president of the Fairfield County Medical Society; medical examiner; formerly town health officer; served as director of contagious service, secretary to medical staff, member of the medical board, and member of attending medical staff, Stamford Hospital, where he died April 1, aged 70, of cerebral embolism.

Darvas, Nicholas, New York; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1922; died April 21, aged 55.

Dixon, Guy E., Hendersonville, N. C.; St. Louis College of Physicians and Surgeons, 1903; member of the American Medical Association; died recently, aged 74, of uremia and chronic nephritis.

Dubbs, Robert Lovine ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1901; died in Jefferson Hospital March 26, aged 81.

Dux, Henry M., Jacksonville, Fla.; College of Medicine and Surgery (Physio-Medical), Chicago, 1911; president of the Dux Chemical Works; died in St. Antonio, March 18, aged 71, of coronary heart disease.

Eagan, Robert Lester, La Crosse, Wis.; Marquette University School of Medicine, Milwaukee, 1915; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; past president of the Seventh District Medical Society; served during World War I; affiliated with St. Francis and Grandview hospitals; died April 4, aged 61, of coronary occlusion and arteriosclerosis.

Ellison, Thomas, Philadelphia; Jefferson Medical College of Philadelphia, 1903; died April 16, aged 78, of carcinoma of the colon.

Ervin, William Lindley, Inverness, Miss.; Memphis (Tenn.) Hospital Medical College, 1903; member of the American Medical Association; died April 16, aged 75, of carcinoma of the liver.

Fagan, Frank D., Gove, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1906; county health officer; died April 9, aged 74, of heart disease.

Farnum, Charles George ✠ Peoria, Ill.; Rush Medical College, Chicago, 1901; past president of the Peoria County Medical Society and first vice-president of the Illinois State Medical Society; member of the Industrial Medical Association; formerly associate editor of the *Peoria Medical Journal*; died in the Methodist Hospital April 25, aged 75.

Finlayson, Alan Daniel ✠ Cleveland; University of Vermont College of Medicine, Burlington, 1910; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychoanalytic Association and the American Psychiatric Association; on the faculty of Western Reserve University; served during World War I; on the staff of the Lakeside Hospital; died April 23, aged 71, of cerebral hemorrhage.

Fisher, Ray Homer ✠ Oakland, Calif.; University of Colorado School of Medicine, Denver, 1909; served on the staff of the East Oakland Hospital; died April 25, aged 69, of coronary heart disease.

Flynn, William Anthony, Amesbury, Mass.; Tufts College Medical School, Boston, 1923; served during World War I; a member of the board of health; a member of the staff of the Amesbury Hospital, of which he had been a member of the board of trustees; affiliated with Anna Jaques Hospital in Newburyport; died April 12, aged 54, of coronary occlusion.

Freeman, Charles Doney, St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; specialist certified by the American Board of Dermatology and Syphilology; member of the American Medical Association and the American Dermatological Association; emeritus assistant professor of dermatology at his alma mater, now known as the University of Minnesota Medical School; served on the staffs of Charles T. Miller, St. Joseph's, and St. Luke's hospitals; died April 18, aged 73, of lymphatic leukemia and hypertension.

Garner, James S., Rome, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1908; affiliated with McCall Hospital; died April 16, aged 73, of arteriosclerotic heart disease.

Garson, Rudolph Ronald ✠ Brooklyn; Medizinische Fakultät der Universität, Wien, Austria, 1924; died recently, aged 55, of bronchogenic carcinoma.

Gazda, Joseph A. ✠ Chicago; Chicago College of Medicine and Surgery, 1913; died in Laguna Beach, Calif., April 8, aged 70.

Gillaspie, William Augustus, New Orleans; University of Missouri School of Medicine, Columbia, 1896; Medical Department of Tulane University of Louisiana, New Orleans, 1900; affiliated with Hotel Dieu, Sisters' Hospital, where he died April 4, aged 78, of acute pyelonephritis and arteriosclerotic heart disease.

Goglia, Alfred Antonio ✠ Boston; College of Physicians and Surgeons, Boston, 1936; served during World War II; died March 22, aged 43, of coronary thrombosis.

Gorrell, Talbot John H., Coral Gables, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; member of the American Medical Association, Illinois State Medical Society, and the American Academy of Ophthalmology and Otolaryngology; died in Miami April 14, aged 79, of pneumonia.

Hardin, Julia Helen ✠ Merion, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1904; emeritus professor of anesthesia at her alma mater; member of the American Society of Anesthesiologists; died in the Woman's Hospital April 12, aged 72, of coronory occlusion.

Hassell, Lyle Leland, Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1931; member of the American Medical Association; served during World War II; formerly director of the Faulkner County health unit; died March 2, aged 47.

Hatteroth, William Henry Carl, Oakland, Calif.; Cooper Medical College, San Francisco, 1903; member of the American Medical Association; on the staff of the Permanente Hospital; died April 18, aged 72.

Hendley, Roy Lawrence, Cross Plains, Tenn.; Vanderbilt University School of Medicine, Nashville, 1937; affiliated with Robertson County Hospital in Springfield; died March 15, aged 42, of hypertension and coronary thrombosis.

Hopkins, William Benjamin, Tampa, Fla.; University College of Medicine, Richmond, 1907; member of the American Medical Association; served during World War I; affiliated with Tampa Municipal Hospital, where he died April 27, aged 68, of cerebral hemorrhage.

Houser, Charles Dorsey, Baker, Ore.; University of Oregon Medical School, Portland, 1914; member of the American Medical Association; affiliated with St. Elizabeth Hospital; died April 4, aged 64, of carcinoma of the rectum.

Inches, James W., Detroit; Detroit College of Medicine, 1896; formerly police commissioner and city health commissioner; at one time mayor of St. Clair, Mich.; died in Marion, Pa., March 29, aged 91.

Irving, George Russell, New York; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; served during World War I; affiliated with St. Luke's and New York City hospitals; died in Columbia-Presbyterian Medical Center April 14, age 61.

Jaeger, Gern William ✠ Niagara Falls, N. Y.; University of Buffalo School of Medicine, 1937; served during World War II; died recently, aged 42, of portal cirrhosis and acute yellow atrophy of the liver.

Johnson, Grover Erman ✠ McLeansboro, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; fellow of the American College of Surgeons; formerly practiced in Chicago, where he was affiliated with Evangelical Hospital; died April 25, aged 67.

Jones, Thomas Spec, Baton Rouge, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1906; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Our Lady of the Lake Sanitarium; died recently, aged 70.

Kaiden, Maxwell Harris ✠ New York; University and Bellevue Hospital Medical College, New York, 1911; specialist certified by the American Board of Otolaryngology; formerly adjunct professor of otology at the New York Polyclinic Medical School and Hospital; affiliated with the Home and Hospital of the Daughters of Israel; died April 9, aged 65.

Keagy, Charles A., Hanover, Pa.; Baltimore Medical College, 1902; died March 26, aged 77.

Kempton Rockwell M. ✠ Saginaw, Mich.; University of Michigan Medical School, Ann Arbor, 1918; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; fellow of the American College of Physi-

cians; past president of the Saginaw County Medical Society; chief of pediatrics, Saginaw General and St. Mary's hospitals; died April 5, aged 63.

Klein, Abraham, Brooklyn, Long Island College Hospital, Brooklyn, 1908; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; medical adviser for the draft boards during World War I and II; consulting physician, Greenpoint Hospital; died April 27, aged 67.

Knapp, George LeRoy, Ticonderoga, N. Y.; University of Vermont College of Medicine, Burlington, 1905; member of the American Medical Association; past president of the Essex County Medical Society; on the staff of the Moses Ludington Hospital, where he died March 23, aged 71, of coronary occlusion.

Kramps, Herbert William Joseph, Chicago; Loyola University School of Medicine, Chicago, 1932; member of the American Medical Association; affiliated with St. Elizabeth Hospital, where he died April 23, aged 44, of bronchopneumonia and chronic nephritis.

Lahmers, Frederick, Akron, Ohio; Baltimore Medical College, 1898; formerly practiced in Barberton, where he was health officer, and affiliated with Citizens Hospital; died in City Hospital March 29, aged 79, of arteriosclerotic heart disease.

Larson, Clarence Benjamin, Bigfork, Mont.; Northwestern University Medical School, Chicago, 1921; died in Missoula March 21, aged 60, of coronary thrombosis.

Leake, John Phillips, St. Francisville, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1901; fellow of the American College of Surgeons; formerly practiced in New Orleans, where he was affiliated with Touro Infirmary, and associate professor of otolaryngology at the Tulane Post Graduate School of Medicine; died recently, aged 80, of coronary thrombosis.

Loebell, Maurice A. ✠ Zanesville, Ohio; Jenner Medical College, Chicago, 1912; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; served during World War I; affiliated with Bethesda Hospital, where he died March 17, aged 69.

Lynch, William Francis ✠ Worcester, Mass.; Harvard Medical School, Boston, 1908; member of the founders group of the American Board of Surgery; member of the New England Surgical Society; fellow of the American College of Surgeons; affiliated with St. Vincent Hospital; died May 2, aged 72, of coronary occlusion.

McCormick, Robert Roy ✠ Endicott, N. Y.; McGill University Faculty of Medicine, Montreal, Canada, 1922; affiliated with Ideal Hospital; died in Sunnybrook Hospital, Toronto, Canada, April 26, aged 59, of subarachnoid hemorrhage.

McCullough, James Morton ✠ Rodeo, Calif.; Oakland College of Medicine and Surgery, 1918; member of the Industrial Medical Association; served as treasurer of the Western Association of Industrial Physicians and Surgeons; past president of the Contra Costa County Medical Society; died in Oakland April 5, aged 56, of acute coronary occlusion and hypertension.

Mensch, Saul Allan, New Hyde Park, N. Y.; Medizinische Fakultät der Universität, Wien, Austria, 1935; member of the American Medical Association; served during World War II; died recently, aged 42.

Mervis, Frank Henry ✠ Chicago; Chicago College of Medicine and Surgery, 1914; member of the Indiana State Medical Association, died in Swedish Covenant Hospital May 8, aged 59, of cerebral hemorrhage.

Molloy, Lee Pope, Paducah, Ky.; University of Louisville (Ky.) Medical Department, 1907; died in the Riverside Hospital April 3, aged 76, of heart disease.

Moore, James Nelson, Eureka, Calif.; University of California Medical School, San Francisco, 1944; served during World War II; died in the Veterans Administration Hospital, Palo Alto, April 17, aged 35, of multiple sclerosis.

Murrie, Robert Gregg, Albany, Texas; University of Texas School of Medicine, Galveston, 1905; county health officer; affiliated with Shackelford County Memorial Hospital; died in Hendricks Memorial Hospital, Abilene, March 14, aged 67, of arteriosclerotic cardiovascular disease.

Musselwhite, Brooks Jesse, Westmont, Ill.; Bennett Medical College, Chicago, 1914; formerly practiced in Chicago, where he was for many years a police surgeon; died April 20, aged 63, of coronary occlusion.

Nelson, Michael, Chicago; Harvey Medical College, Chicago, 1903; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the American Medical Association; affiliated with American Hospital, where he died April 16, aged 77, of hypertensive heart disease and arteriosclerosis.

Nickum, John Stanley ✠ Bridgeport, Conn.; Tufts College Medical School, Boston, 1918; fellow of the American College of Physicians; on the staff of the Bridgeport Hospital, where he died April 8, aged 60, of acute coronary occlusion.

Noble, Lemuel Franklin, Boston; College of Physicians and Surgeons, Boston, 1913; died March 2, aged 78, of heart disease.

Norvell, Elijah Edward, Oklahoma City, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; University of Nashville (Tenn.) Medical Department, 1904; died in Wesley Hospital April 21, aged 79, of heart disease.

Oberschmidt, Charles McCormick, Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1924; a director of the Shelby County Tuberculosis Association; member of the American Trudeau Society and the American Medical Association; served on the faculty of his alma mater; for many years on the staff of the Oakville (Tenn.) Memorial Sanatorium; affiliated with Baptist Memorial, Methodist, St. Joseph, and John Gaston hospitals; died April 4, aged 50, of myocardial infarction and hypertension.

Olney, Thomas Albert, Chesterton, Ind.; Rush Medical College, Chicago, 1892; member of the American Medical Association; served on the staff of St. Joseph's Hospital in South Bend, where he died April 4, aged 81, of carcinoma of the pancreas.

Otto, Jacob Schweighauser ✠ Buffalo; University of Buffalo School of Medicine, 1898; an Associate Fellow of the American Medical Association; formerly on the faculty of his alma mater; served on the staffs of the Children's, Edward J. Meyer Memorial, and Buffalo General hospitals; died May 3, aged 79, of edema of the lungs.

Pugh, Bernard McCarthy ✠ Clinton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; formerly mayor; died Feb. 19, aged 63.

Repp, John Jacob, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1905; member of the American Medical Association; died April 29, aged 82, of prostatic carcinoma.

Spooner, John Ira, Donalsonville, Ga.; Medical Department of Tulane University of Louisiana, New Orleans, 1911; member of the American Medical Association; died March 11, aged 68, of diabetes mellitus.

Strickler, Clarence A., Mattoon, Ill.; University of Louisville (Ky.) Medical Department, 1879; died March 20, aged 95, of coronary disease and hypertension.

Stuckert, Harry ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1907; assistant professor of obstetrics and gynecology at his alma mater; fellow of the American College of Surgeons; on the staffs of Jefferson Medical College Hospital and St. Joseph's Hospital; died March 3, aged 70, of pulmonary embolism.

Sullivan, Michael Joseph, Maywood, Ill.; Rush Medical College, Chicago, 1915; member of the American Medical Association; formerly practiced in Chicago, where he was a member of the board of health; died March 22, aged 77, of pneumonia.

GOVERNMENT SERVICES

ARMY

Seventeen Courses for Military and Civilian Physicians.—The Army Medical Service will conduct 17 short postgraduate courses in surgery, psychiatry, and other subjects of major medical importance during the last six months of 1952. The instruction is open to both military and civilian physicians and is the broadest program of postgraduate professional training of this type ever sponsored by the Army Medical Service. Postgraduate training is designed to ensure that all Army personnel continue to receive the finest professional medical care obtainable.

The courses will be given at six large Army teaching hospitals and the Armed Forces Institute of Pathology in Washington, D. C. They are an integral part of the Army's career plan for medical officers under which physicians are encouraged to continue their professional education. The instruction also serves to keep medical officers in outlying installations abreast of new developments and to foster the growth of teachers in the Army Medical service. Eligible applicants must have attained one of two qualification levels. Those considered to be at level 1 are board-certified or board-qualified physicians, chiefs or assistant chiefs of services in hospitals, and other officers well advanced in the study of their specialty. Applicants with level 2 qualifications include officers partially qualified in a specialty, those with a special interest in the subject, or ward officers or unit surgeons responsible for medical treatment in the specialty concerned. Medical officers receiving residency training may attend courses only at hospitals where they are serving.

Applications from Army medical officers on active duty and full-time Civil Service physicians at Army installations should be forwarded to the Office of the Surgeon General, Department of the Army, Washington 25, D. C. Attention: Career Management Branch, Personnel Division. Applications should be received six weeks prior to the opening date of the course. Reserve medical officers should apply to their Army area commander, while National Guard physicians should write to the National Guard Bureau in Washington. Civilian physicians in the Federal service or in private practice should apply to the appropriate hospital or installation commander. The courses will be given at Army and Navy Hospital, Hot Springs, Ark.; Letterman Army Hospital, San Francisco; Walter Reed Army Hospital, Washington, D. C.; Fitzsimons Army Hospital, Denver; Brooke Army Hospital, Fort Sam Houston, Texas; and Armed Forces Institute of Pathology, Washington, D. C.

Lieut. Col. Isidor Markowitz Awarded Legion of Merit.—Surgeon General George E. Armstrong awarded the Legion of Merit to Lieut. Col. Isidor Markowitz June 18 for "exceptionally meritorious service" as Surgeon of the Third Medical Battalion in Korea. The citation accompanying his decoration declared that through "meticulous planning and close supervision" Colonel Markowitz had "instituted extensive sanitary and preventive medicine programs which raised health and living standards, directed an efficient system of out-patient accounting in the field and established effective liaison between the staffs of the division and medical battalion." The citation noted that a study by Colonel Markowitz of the effect of fatigue on gun crews' efficiency had "assisted in improving artillery fire of operating personnel."

Colonel Markowitz's proposals to bring personnel qualified to perform eye refractions up to the division clearing station level to avoid needless evacuation of soldiers who had broken their spectacles was "of inestimable value in the formulation of comprehensive corrective measures." He also succeeded in having serology testing sets installed at the Third Division clearing station, thus eliminating the need for flying specimens back to Pusan or Taegu by courier plane for laboratory examination. The citation concluded: "With complete devotion to duty, Colonel Markowitz dedicated his time and talents to maintaining optimum effectiveness in medical service and his outstanding professional ability and the distinguished manner in which he fulfilled the responsibilities of his office reflect great credit on himself and the military service." Colonel Markowitz was previously awarded the Bronze Star Medal with "V" device and Oak Leaf Cluster and the Purple Heart for his service in Korea.

Museum Exhibit of Ninety Year History.—The Armed Forces Institute of Pathology, formerly the Army Medical Museum, 9th and Independence Avenue, S.W., Washington, D. C., is presenting an exhibit tracing 90 years of its history. The exhibit, which will be displayed for the six months following May 21, includes some relics of Major Walter Reed when he was engaged on the famous yellow fever experiments, and of Major F. F. Russell, now Brigadier General, retired, who gave the first U. S. Army antityphoid vaccine to volunteers from the museum's staff. A replica of the old museum depicts Civil War days when Surgeon John H. Brinton, first curator of the museum, toured battlefields to collect material for the museum. Other exhibits show developments in medical illustration through the years and modern museum techniques.

Personal.—Col. William S. Moore (MC) has reported for duty in the Office of the Surgeon General, where he will serve as chief of the hospitalization and operations branch of the medical plans and operations division. Colonel Moore's most recent assignment was as commanding officer of the 8167th Army Unit at Tokyo Army Hospital.

PUBLIC HEALTH SERVICE

Recommendations of Conference on Rabies.—The South Middle Atlantic Regional Rabies Conference was held June 2-3 in Washington, D. C. Called by the Public Health Service staff of the Region 3 Office of the Federal Security Agency, the conference was cosponsored by the Fish and Wildlife Service of the Interior Department and the Bureau of Animal Industry of the Department of Agriculture. An Eastern Regional Rabies Council was established to develop plans and procedures to put the recommendations of the conference into effect. This council will be a continuing body representing the following states, which took part in the conference: Pennsylvania, Ohio, Maryland, Delaware, Virginia, West Virginia, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, and the District of Columbia. Dr. Martin P. Hines, chief, veterinary public health section, North Carolina State Board of Health, was named chairman of the council and Dr. Albert S. McCown, director, bureau of communicable disease control, Virginia State Health Department, was named secretary.

The recommendations of the conference were as follows:

1. That each of the affected States inaugurate coordinate programs for the control of rabies; that each State's program can most effectively be carried out through the creation of a committee composed of representatives from these agencies at the State level responsible for public health, livestock disease control, and wildlife conservation. This Committee will maintain close cooperation with the unofficial organizations interested in rabies control; that each State Committee designate one of its members, preferably the State Public Health Veterinarian, where one exists, as the permanent Secretary, the duties of the Secretary to include the exchange of current rabies control information between States.
2. That each State arrange for adequate diagnostic facilities, including animal inoculation of any Negri negative and questionable specimens.
3. That each State arrange for the reporting of rabies cases in ALL animals, reports to be collected by an approved State agency, and that the State Health Officer include these data in the weekly telegraphic reports to the U. S. Public Health Service.
4. The Conference recognized the importance of rabies in wildlife and recommends that investigations be undertaken to study the epizootiology of the disease in wild fauna in order to improve methods of control.
5. That technical assistance and guidance be made available from the U. S. Public Health Service, the U. S. Fish and Wildlife Service and the U. S. Bureau of Animal Industry.

Personal.—Dr. Paul Lindquist, formerly medical officer in charge of the Heart Demonstration Program in Charleston, S. C., has been named to head the health team of the Technical Operation Administration (Point 4) program in Libya.

FOREIGN LETTERS

AUSTRALIA

Tetanus Following Use of Starch Dusting Powder.—Ten days after a patient in a Queensland hospital underwent an operation for the relief of intestinal obstruction clinical tetanus developed, and he died two days later with severe opisthotonos. The health department, in the course of the investigation, studied a residual supply of a starch dusting powder used for surgical gloves. The powder was packaged by a British pharmaceutical organization. It made no claim to be sterilized.

Laboratory studies were made on guinea pigs, half of which were protected by tetanus antitoxin. All were injected with a suspension of the powder. All the unprotected animals died in a spasm. A disturbing feature of this inquiry was that this powder had before use been subjected to sterilization by an autoclave under standard conditions. It was found that steam under pressure did not penetrate the starch powder. Dry heat was found to be necessary for efficient sterilization. Tests have been made on all other brands of starch powder on the market, but no evidence of infection has been found.

Religious Sect Bans Blood Transfusion.—A group in Australia, known as Jehovah's Witnesses, interpret a passage in Genesis 9: 4 as a holy injunction against the practice of transfusion of blood. This was discovered recently when arrangements were made in Brisbane, Queensland, for a blood transfusion during an operation for arthroplasty of the hip joint. The patient was an elderly woman whose husband was a member of Jehovah's Witnesses. The operation was therefore modified, and dextran was employed to support the patient's cardiac output during the operation. Recovery was uneventful. The passage in Genesis reads, "Flesh with the life thereof, which is the blood thereof shall ye not eat."

Potassium Bromate Deaths.—In an Australian country town, three children are reported to have been poisoned with potassium bromate, obtained from a home kit for hair waving. The powder is described as the "neutralizer." The children were aged 13, 11, and 4 years. The neutralizer was dissolved in ginger beer, and each child was given the contents of one packet in this way. The mother took a quarter of a packet herself. Soon after ingestion the boy aged four began vomiting and crying.

Desperate measures, including exchange transfusion, using up to nine liters of blood, were tried in an unsuccessful attempt to save the lives of the children. Progressive weakness of the victims forced abandonment of the transfusions. All three died. The hospital physicians knew of no antidote for potassium bromate. The mother recovered from the effects of the poison she took. She was then charged with the wilful murder of her children. At the trial the woman denied that she knew the powder was poisonous. A jury acquitted her on charges of wilful murder, murder, or manslaughter of the boy aged 11 years. She is still to stand trial for the wilful murder of her two other children.

Hospital Finance in Australia.—The financing of public hospitals from state and commonwealth revenue has proved inadequate to meet the rising costs resulting from inflationary trends to the order of 20% per year. New South Wales and Queensland conduct state lotteries to finance their hospitals, and Victoria is contemplating such a method. It is the view of the Commonwealth Minister of Health, Sir Earle Page (himself a medical man), that lotteries are a wasteful method of finance, as 70 to 80% of the income is spent on administration and prizes. There are four other methods of hospital finance. 1. Taxation. As taxation has now reached its limit, no further help can be expected from this source. 2. Patients' fees. Most of the patients in a public hospital cannot afford more than a "token" payment. 3. Charitable donations. The recent increase in taxation has eliminated the income from these sources. 4. Prepaid insurance. It could be compulsory or voluntary, with or without government aid.

This last is now the official policy of the government. Approved organizations collect a contribution of three pence (3.5 cents) per week for single persons. When a contributor enters a hospital he will receive £2.2 ($5.88) per week from the organization. He will also receive an additional benefit from the government of £1.8 ($3.92). Whether he is a contributor or not, he will receive the government subsidy of £2.16 ($7.84) per week. Thus a contributor receives an "incentive" of £3.10 ($9.80) to join an organization and subscribe to its membership. The total benefit to a contributor is £6.6 ($17.64), but this will not meet the whole of his basic hospital costs, which at present vary from £8.8 to £16.16 ($23.52 to $47.04) per week.

Holger Nielsen Method Adopted.—At its annual conference in Sydney last month, the Surf Life Saving Association of Australia officially adopted the "push-pull" Holger Nielsen method of artificial respiration. The article in THE JOURNAL (**147:** 1444 [Dec. 8] 1951) entitled "Critical Survey of Manual Artificial Respiration" and the report by the Council on Physical Medicine and Rehabilitation in the same journal, page 1454, on this method assisted the association in making its decision. The Royal Humane Society, an organization of British origin, is deferring action. The geographical situation of the main centers of population along the seaboard of Australia has made surf bathing a national pastime. Voluntary associations of young men, and sometimes women, provide a valuable service at the chief surfing beaches during holiday seasons. At the ocean beach, restricted areas of about 100 yd. in width are marked with flags, and bathers are advised to enter the surf in that location only. A continuous watch is kept for bathers who need assistance. When this occurs (and it does nearly every day in the season) a highly organized and trained team of surf lifesavers goes into action. Many lifesaving units are equipped with Eve's rocking apparatus, but the Schafer method has been the standard one in use ever since the system of lifesaving on the beaches was developed early in this century.

Childbirth by Proxy.—A businessman in Sydney advertised for a foster mother to bear a child for his wife. The successful applicant would be fertilized by artificial insemination using the husband's semen. Investigations had shown the man to be normally fertile, but his wife was sterile. The amount to be paid to the "foster" mother was not disclosed, but it was stated to be substantial. Thirty-eight applications were received, and a careful screening was undertaken. It is understood that one has been chosen. The mother will be required to give the baby to the couple after birth, when it will be legally adopted. The proceedings were arranged by a medical agency, and the identities of those concerned will not be known to each other.

Poll Views on Professional Secrecy.—A cross section of Australia's population was asked by Gallup Poll interviewers, "If it is necessary to protect innocent people, should doctors give the police confidential information about their patients?" The majority said "yes." The question was regarded in medical circles as an isolated and extreme example. The layman was given the impression that no other evidence was being sought by the police to insure justice. Respect for physician's confidence is felt to be so valuable in the physician-patient relationship that the benefit far outweighs a hypothetical disadvantage such as was posed.

ACTH to be Made Here.—A composite Australian-Danish company, formed in Australia, expects to be producing corticotropin (ACTH) this year. Representatives of Frederiksberg Chemical Laboratories Ltd. of Copenhagen and Drug Houses of Aus-

The items in these letters are contributed by regular correspondents in the various foreign countries.

tralia Ltd. have formed a new company, which is called the Acton Laboratories (Aust.) Pty. Ltd. In the meantime, the public demand for cortisone and corticotropin has fallen considerably. This had reached a high level following early enthusiastic announcements in the lay press and popular magazines.

Medicolegal Society Founded.—Since there are many problems to which the joint intelligence of the legal and medical professions could make a contribution, a medicolegal society has been founded in Queensland. Problems that were outlined at the inaugural meeting were psychiatric anomalies, juvenile delinquency, and matrimonial problems.

BELGIUM

Anesthesia and Surgery of the Heart.—In the *Acta chirurgica belgica,* van Nouhuys describes his technique for administration of anesthesia in the Blalock operation in 26 children aged from 7 months to 15 years. The outstanding features of this technique are: ether-oxygen induction, local pharyngolaryngeal anesthesia with 10% cocaine and reinduction, blind nasotracheal intubation whenever possible, and maintenance of narcosis with cyclopropane-oxygen with curare (0.5 mg. per kilogram of body weight). The author chooses the nasotracheal route, with which he has had a great deal of experience, because he thinks that a tube that fits closely in the nostril is perfectly adapted to the diameter of the glottic orifice. Packing is difficult, and tubes with sleeves are apt to cause glottic edema.

The author also reports operations in three patients from 5 to 10 months old for tracheoesophageal stenosis due to the presence of a double aortic arch. The patients were very delicate, cyanotic, and dyspneic, with pulmonary infections. Induction, which was very difficult, was accompanied by an intensification of stridor and cyanosis. The passage of a tracheal tube, even if it does not pass the stenosis, permits the aspiration of secretions and improves the situation, which changes entirely as soon as the stricture is removed surgically. The three patients had uneventful convalescences.

Thyroid Cancer.—Dailey, Lindsay, and Soley report in the *Journal of the International Union Against Cancer* that in 134 cases of malignant tumors of the thyroid gland, the most frequent types were papillary carcinoma (48), adenocarcinoma (37), and simple carcinoma (25). There were 21 patients known to have died and 10 to have lived with metastases, some of which were in the lungs and in the bones, and this after a lapse of time amounting sometimes to 10 years.

Desaive and Closon, in the *Revue médicale de Liège,* show the rarity of thyroid cancer (1% of all cancers, 2.7% of goiters, and 0.5% of hyperthyroids). The average age is between 55 and 60 years. Thyroid cancer is more favorable in children than in adults; it is more frequent in women and more serious in men. Thyroid cancer is rarely associated with other cancer.

Belgian League Against Rheumatism.—The Ligue Belge contre le Rhumatisme lately celebrated the 25th anniversary of its founding, under the presidency of Dr. Ferond and in the presence of numerous foreign rheumatologists. Numerous valuable studies were presented on this occasion, among which was "Relations between hypophyseal disturbances and articular affections" by Dr. Layami. The author reviewed the action of the hormones: somatropic, corticotropic, thyrotropic, and gonadotropic.

The somatropic hormone produces hypertrophy of the cartilaginous and periosteal tissues, usually without pain and with articular laxity. The disease has a course like that of degenerative arthritis, the vertebrae close to the ninth dorsal are hypertrophied in width, giving an impression of flattening; there are moniliform osteophytes, unrelated to a discal lesion; unlike the condition in rheumatism, blood phosphorus is elevated and the bones sometimes present a tufted appearance.

Corticotropic hormone produces osteoporosis, predominantly spinal and pelvic, ballooning of the disks, and no osteophytosis. There is a retardation in chondrogenesis and osteogenesis; the lesions, in the adult, affect the connective web of the osseous tissue.

Thyrotropic hormone produces hyperthyroid osteosis in various forms, for instance: hyperalgia of the skeleton; fractures as in a case of neoplasm; sometimes the appearance of polyarthritis, predominantly spinal and pelvic; calciuria, increased in the beginning; silent humoral syndrome; sign of discreet hyperthyreosis; and osteoporosis. These manifestations are cured when the exophthalmic goiter is cured. They are reproduced when hyperthyroidism is provoked in an animal.

With regard to the gonadotropic hormone, the gonadal deficiency does not seem to act, in young persons, on the cartilage. The menopausal syndrome is a complex syndrome in the course of which the three preceding factors exercise a variable action. The hypophysis seems to be the gland that plays the largest part in this condition.

Prof. Merle d'Aubigné presented a paper on orthopedic treatment of rheumatic localizations in the lower limbs.

Neurotomies give uncertain and impermanent results. Apart from cases in which there are exceptional indications, arthrodesis of the tibiotarsal is the operation to be recommended for the ankle. For the knee, ankylosis, which is somewhat crippling, is not advisable except in cases of articular laxity or in patients for whom walking is the most important function. For the rest, patellectomy constitutes an excellent procedure. In the hip, ankylosis is better tolerated; the disadvantages of earlier procedures are obviated by arthrodesis with nailing. This intervention results, however, in a large number of venous thromboses. Arthroplasties with a hip cup or acrylic prosthesis often give very good results, but not always. It is advisable to operate on subluxations when they begin to be painful; at that time repair of the acetabulum may be sufficient.

A third study was "Heredity and rheumatism." Stocker (Cleveland) presented statistics on 8,000 persons followed because of nodosities on the fingers, uricemia, and ankylosing spondylitis. Nodosities were found in 70% of the cases in families of persons who had already shown these characteristics. Sisters were affected oftener than the other members of the family, in the proportion of 8 to 11; Heberden's nodosities show a hereditary character largely influenced by the menopause.

Uricemia not being always synonymous with gout, the author investigated the possibility that it might have a predominantly recessive character. It is transmitted as a dominant characteristic in 85% of men and 15% of women. Gout may possibly be due to an abnormal androgen, the importance of which is greater in men than in women. This hormonal factor rises in women after the menopause, in men after adolescence. Ankylosing spondylitis also seems to be a hereditary disease, brothers being affected oftener than sisters.

Trauma and Phosphatemia.—At the laboratory of experimental medicine of the Faculté de Médecine de Bruxelles, Moyson found a substantial increase in serum phosphatase activity in patients who have undergone aseptic surgical intervention. The same phenomenon appeared in patients who had profuse hemorrhages or extensive burns, and finally in two patients with ischemic gangrene of an extremity. The author reproduced this hyperphosphatemia by causing a profuse and sudden hemorrhage in dogs. It was still more evident if a part of the blood taken from the animal was aseptically reinjected into its peritoneum.

The hyperphosphatemia is not immediate; it is, therefore, not one of the symptoms of immediate traumatic shock. Neither is it coincidental with post-traumatic hyperglycemia with which it does not seem to be connected. Finally, the increase in serum phosphatase activity is not a result of hyperthermia, since it is observed both when fever exists and also in posthemorrhagic states and ischemic gangrene, in which the temperature is normal.

Death of Dr. Derscheid.—Dr. G. Derscheid, pioneer of the antituberculosis battle in Belgium, has died. In 1897, he created a service for pulmonary tuberculosis at the Polyclinic in Brussels, the first public move to combat tuberculosis. He organized, in 1902, the Société Anonyme des Sanatoria Populaires with 250 beds; in 1926 a surgical section was established there. In 1923, he created the National Association Against Tuberculosis; and in 1929, Dr. Derscheid organized the Oeuvre Nationale de Défense contre la Tuberculose.

CHILE

Free Protoporphyrin in Red Blood Cells in Anemia.—Drs. H. Ducci and L. Toriello of the Salvador Hospital, having established that the normal value of free protoporphyrin in red blood cells is 39 γg per 100 cc. of red blood cells, decided to study the values in cases of anemia. In 20 cases of pernicious anemia the values were 21 γg. Treatment influenced these values, and simultaneously with the reticulocyte crisis there was a marked increase in the values of free protoporphyrin. In the 15 cases of hypochromic anemia the average values were 146 γg. It was seen that in cases in which the red blood cells were within 4 million the values were normal. In eight cases of hemolytic anemia the value of free protoporphyrin was higher than the maximum normal values. The authors suggest that the determination of free protoporphyrin, besides giving us a newer and better understanding of the physiopathology of anemia, gives a new appreciation of the results of the therapy used.

New Institute of Neurosurgery.—The new building for the Instituto Central de Neurocirugia y Neuropatologia is under way, and the institute has arranged plans to move into the building in the near future. The latest acquisition of the institute is an electronic microscope for neuropathological studies. The department of neurophysiology equipped with the latest instruments of research will be provided with two operating rooms for research work with animals. Special facilities have been provided for the departments of neuroradiology, brain chemistry, clinical electroencephalography, neurotology, and neuro-ophthalmology. The hospital will have 126 beds and 4 operating rooms, one of which will be dedicated exclusively to emergency cases. Besides a readaptation center, the institute will have a kinesitherapeutic, a psychosurgical, and a psychotechnical center. At present the institute is carrying out research work in epilepsy and corticograms. The institute was founded in 1939, and its director is Prof. Alfonso Asenjo. The institute has and is receiving interns from Mexico, Venezuela, Peru, Argentina, and France. The hospital is provided with spacious quarters for interns.

Rheumatoid Arthritis.—Recently Drs. M. Losada and O. France published a study on the diagnosis of rheumatoid arthritis derived from the study of 200 cases; 70% were women. The age distribution was: 20-29, 18%; 30-39, 25.5%; 40-49, 32.5%; and 50-59, 13%. The onset of the disease was acute or subacute in 54%. Focal infections in areas such as the teeth and sinuses were present in 23%. Rheumatic heart lesions were present in 5%. Regarding the symptomatology, general well-being was affected in 45%, fever was present in 55%, tachycardia was present in 14%, and a normal pulse rate in 81%. Skin lesions, those of the hands being smooth, brilliant, and atrophic, were present in the vast majority of the patients. Subcutaneous nodules were found in 6.1%. Muscular and vasomotor alterations were very frequent, and two patients had Raynaud's syndrome. Adenitis of the neck, elbow, and armpit was found in 20% of the patients, splenomegaly in 2.5%, bilateral pleurisy in 1%, ocular lesions in 2.5%, and neuritis in 1%. Sjögren's syndrome was present in four cases.

In 81 patients the authors were able to make a detailed study of joint lesions. The joints were symmetrically attacked in 53%. The frequency of the joints attacked were: big joints of the lower extremities 35%, hands 24.5%, big joints of the upper extremities 22.5%, and feet 11.3%. The evolution of the joint lesions was irregular in 54.3%, centripetal in 26%, centrifugal in 7.4%, and without any specific determination in 12.3%. The classical joint deformations of the hands were present in 62%. A complete x-ray study revealed that 82% of the patients presented the classical lesions.

Regarding laboratory tests, moderate normochromic anemia was found in 33%, leukopenia in 15.4%, and leukocytosis in 30%. A deviation to the left of the white blood cell count was found in 74.2%, eosinophilia in 30%, and lymphocytosis in 54.7%. The serum flocculation tests were positive in 81.5%. A decrease of the excretion of the total neutral 17-ketosteroid bodies in the urine was found in 74%. The authors stress the importance of the following serologic tests: antistreptococcic agglutinins, sensitized agglutinins against sheep red blood cells, and antistreptolysin titer. The authors are working in the Salvador Hospital under Prof. Hernan Alessandri.

Border Sanitary Agreement.—The third annual meeting of the control committee of the Border Sanitary Agreement between Chile, Bolivia, and Peru was held in La Paz, Bolivia, from March 10 to March 12. The Chilean delegation was headed by Prof. A. Neghme; the Peruvian delegation, by Dr. Enrique Villalobos; and the Bolivian, by Dr. N. Orihuela. The agreement stipulates the exchange of technical and other information for the control of infections and parasitological diseases (malaria, yellow fever, exanthematic typhus, smallpox, and bubonic plague). The objectives formed were: (1) intensification of the antimalarial campaign in the border regions, (2) increase of work in American trypanosomiasis, (3) use of DDT in control of pediculosis, and (4) investigation of the status of rabies in the border regions. It is possible that in future meetings a delegate of the Pan-American Sanitary Office will assist as an observer.

Antihydatidosis Campaign in Tierra del Fuego.—Fulfilling the agreement signed with Argentina in 1948 concerning the control of hydatid disease the department of parasitology of the health department in conjunction with the ministry of agriculture (Departamento de Ganadería) have, since December, 1951, till the present moment, treated in Tierra del Fuego 3,700 dogs with good results. The method used in the treatment of all dogs was administration of arecoline hydrobromide (4 mg. per kilogram of body weight). Besides this a sanitary education campaign is being carried out.

Yellow Fever Control.—The latest report submitted to the Pan-American Sanitary Office by the entomologist J. Correa regarding the campaign led by the department of parasitology of the health department for the destruction of the Aedes aegypti vector of yellow fever was highly interesting. It revealed that, except for some very small foci still in existence in certain parts of the provinces of Antofagasta and Tarapacá, the vector has been completely eliminated. The success was due to the use of DDT two or three times a year in 56 different localities.

MEXICO

Dedication of New Building and Departments.—In 1951, as a result of a suggestion by President Alemán, several businessmen gave the necessary funds to undertake the construction of new buildings and the enlargement of others already existing at the Instituto Nacional de Cardiología. According to officials of the institute the additions were indispensable in view of (1) the steady increase in cases in the outpatient department, (2) the insufficiency of the wards to take care of all the admission requests, and (3) the fact that the number of graduate students from abroad, as well as from Mexico, has been increasing yearly.

The donations amounted to 4 million pesos and were designated to provide (1) a new four floor building to house the school of nursing and to provide living quarters for interns and graduate students, (2) a new floor for private patients in the general building, leaving the other floors exclusively for patients of low income, and (3) a larger department of surgery.

Last April 18, on the eighth anniversary of the institute, President Alemán dedicated the new departments. Invited to the event and to participate in several scientific meetings were delegates from the medical institutions of Mexico and those from different countries. Among them were Dr. Bernardo Houssay from Argentina, Dr. Ramón Aixalá from Cuba, Drs. Helen B. Taussig, Paul D. White, Joseph Brumlik, and Lewis Dexter from the United States, and Dr. Clarence J. Crafoord from Sweden.

Meeting of Allergy Society.—The Sixth National Meeting of the Mexican Society of Allergy, held in Puebla from Feb. 25 to March 1, was attended by more than 400 delegates from different sections of the country. Papers of particular interest were those by Dr. Salazar, on immunologic studies in asthma and pulmonary tuberculosis; by Drs. Rosales and Bautista, on the role of intestinal parasites in the development of urticaria; and by Dr. Hernández-Jáuregui, on the experimental effects of antihistaminic substances on glycemia. All papers read at the meeting will be published in the *Revista Mexicana de Alergología*, official organ of the society. The next meeting will be held in Monterrey in the first quarter of 1953.

CORRESPONDENCE

DISCARDING OF OUT-DATED MEDICAL TERMS

To the Editor:—In Dr. Stewart Wolf's recent letter in THE JOURNAL on old terms and modern concepts in medicine (May 10, 1952, page 186) I liked one of his final statements: "Consistent progress in medicine today depends, as always, on changing methods and concepts, and clarity in thinking requires that worn out concepts be discarded together with the clichés that serve them." This is particularly true, I believe, in the teaching of clinical medicine, where the vigorous and picturesque language of last century still finds a large place in the professorial vocabulary. In a rapidly changing atomic era, the homespun qualities of an earlier Americana idiom may have lost much if not all of its original rich colloquial connotation; the medical student of today, bewildered and perhaps bemused, repeats in a parrot-like fashion a traditional phrase that has no counterpart or significance in his everyday experience.

Over the years I have enjoyed the philologic jousting with my students in regard to the meaning of certain words and concepts that have been handed down from one medical generation to another with increasing vagueness of their origin or underlying significance. High in such a list of phrases is the "hobnail liver." My grandfather in the 1860's wore hobnail shoes, and as a boy at the turn of the century I remember playing with hobnails, but I doubt that the modern youth has the slightest idea of what a hobnail looks like and why certain changes on the surface of the liver are called hobnail. In the same category is the "nutmeg liver." Older physicians may recall with some nostalgic memories this flavorsome spice; it was used by their mothers at every opportunity. The medical student of today has an amazing amount of misinformation concerning nutmegs. It does not come from Connecticut, it is not a nut, and, if they know the size and shape of the spice kernel, nutmeg liver does not refer to small rounded lumps on the surface of that organ. When nutmeg is grated the cross section has a block pattern very similar to oak wood; in the cut sections of certain livers the older pathologist saw the resemblance.

"Water hammer pulse" always elicits a number of strange interpretations. To the Victorian physician it referred to Gilchrist's hydraulic drilling machine and the pulsations produced in the fabric hose with each stroke of the steam driven pump. Corrigan did not use the pulse in aortic insufficiency to drive a hammer, and Corrigan's *bruits* was not a musical instrument activated by the pulse in this type of valvular heart disease.

A "wiffle-tree murmur" was well known to the horse and buggy doctor. A wiffle-tree is not an evergreen, and the murmur was not the soft blowing poetic sound of gentle breezes blowing through the foliage of exotic shrubbery. It was the harsh squeaking sounds of the wooden harness bar as it turned on the rusting swivel bolt with the movement of the horse. Occasionally a medical student with a rural background recognizes the wiffle-tree murmur for what it is, but he usually tries to bring gallop rhythm into the definition. "Machinery murmurs," "cogwheel breathing," and "tic-toc heart sounds" had a special significance in the 1880's when contemporary family life was being revolutionized by a host of new mechanical gadgets; these traditional terms are meaningless and confusing to the modern student.

There are many other phrases in the list. A "walking beam motion" will cause many an oldster to smile at the memory of river boats and the side-wheelers of the old Fall River Line. A walking beam is not a cane, nor a crutch, nor any other type of orthopedic walking apparatus, notwithstanding most students' comprehension of the concept. Finally, the beloved phrase of the older pathologist: "the lesion is about the size of a millet seed." Although the millet seed was an established unit of size as far back as biblical times, present day youth has probably never seen millet and certainly not its seed.

I agree with my distinguished contemporaries that clinical medicine loses much of its picturesque and robust Victorian phraseology with the elimination of these traditional concepts, but new times demand new words and new thinking. With a vocabulary bristling with words initiated by cultural contact with radio, television, radar, and nuclear fission, the modern medical student enters the classroom unprepared to utilize the thinking of a now bygone period in the description of today's medical science. Cabot once said that the average medical student was in a state of perpetual mental bewilderment; it would seem that the humane point of view would be to lessen rather than increase confusion in medical education.

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OXYGEN THERAPY IN MYOCARDIAL INFARCTION

To the Editor:—In the recent report by Borden, Ebert, and Wilson (*J. A. M. A.* **148:**1370 [April 19] 1952), we were interested to find that the chemical determinations of oxygen in arterial blood taken from patients suffering from acute myocardial infarction with various complications confirm the data previously obtained by the Millikan oximeter and reported by Godfrey, Pond, and Wood (*Am. J. M. Sc.* **216:**605, 1948) and later by Penneys (*Bull. Johns Hopkins Hosp.* **90:**192, 1952). Borden and co-workers note that, unless there is a considerable lowering of arterial oxygen saturation, only a small amount of oxygen can be added to the amount already carried by the blood, by increasing the saturation of the hemoglobin and by increasing the amount of oxygen in solution. They state that with inhalation of 40% and 100% oxygen increases of arterial oxygen content of only 0.9 and 2.2 vol. % occur. We would like to point out, however, that such changes in saturation are accompanied by rises in plasma oxygen tension of approximately 100% and 500%. That such increases in blood oxygen tension are reflected in the tissues has been shown polarographically in skin (Montgomery and Horwitz, *J. Clin. Investigation* **29:**1120, 1950) and in the myocardium, with particular reference to the borders of ischemic areas (Saÿen and others, *J. Clin. Investigation* **30:**932, 1951). It is apparent that these rises are inadequately reflected by measurements of arterial oxygen saturation. It is our contention that, therapeutically, such increases of oxygen tension in tissue may be of great importance.

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ELECTROCARDIOGRAPHIC CHANGES IN PULMONARY EMBOLISM

To the Editor:—In connection with the editorial in the Jan. 26, 1952, issue of THE JOURNAL, page 289, on the differential diagnosis between pulmonary embolism and myocardial infarction, I should like to refer you to a paper on the electrocardiographic changes in pulmonary embolism in the April, 1952, issue of the *Florida Medical Journal* (**38:**701-712)

The electrocardiographic differentiation between the two, particularly that between infarction of the posterior wall and pulmonary embolism, can often be greatly facilitated by attention to the ST and T wave changes in the precordial V leads over the right side of the heart. In posterior wall infarction they are reciprocally elevated and increased in amplitude, never inverted; in pulmonary embolism they may either remain unchanged or show inversion, i. e., the right ventricular "strain pattern" of acute cor pulmonale.

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COUNCIL ON MEDICAL SERVICE

VOLUNTARY HEALTH INSURANCE GAINS IN 1951

Continued and encouraging enrollment gains under all forms of voluntary health insurance have been reported for 1951, according to a recent survey released by the Health Insurance Council.[1] By the end of 1951 it is reported that 85,991,000 persons in the continental United States had some form of hospital expense insurance. At that time, some 65,535,000 persons were carrying surgical expense benefit insurance and 27,723,000 persons were protected against the expenses of nonsurgical care. Numerically these enrollment gains for 1951 were 9,030,000 for hospitalization coverage, 11,058,000 under surgical benefits, and 6,134,000 for medical care expense benefits. Percentagewise, the gains were 12, 20, and 28 respectively.

These gains have been recorded in a year that was accompanied by artificial economic controls in the form of wage and price stabilization. The Wage Stabilization Board sought to control certain elements of voluntary health insurance by restrictions on the amount rather than on the cost of employee benefits.

The current survey represents the fifth annual revision of "A Survey of Accident and Health Coverage in the United States." In May of 1947 the Health Insurance Council created a survey committee and delegated as one of its functions an annual study to determine the total extent of the various forms of voluntary health insurance in the country. Prior to that, several independent and individual estimates had been prepared, but they were not the inclusive studies that have gone into the preparation of these annual surveys.

TABLE 1.—*Persons in Continental United States Carrying Some Form of Hospital, Surgical, or Medical Expense Benefit Insurance on December 31, 1951* *

Type of Protection	Number of Persons Protected		Increase 1951 Over 1950	
	1951	1950	No.	%
Hospital expense	85,991,000	76,961,000	9,030,000	12
Surgical expense	65,535,000	54,477,000	11,058,000	20
Medical expense	27,723,000	21,589,000	6,134,000	28

* Source: Survey Committee of the Health Insurance Council: Accident and Health Coverage in the United States, New York, Health Insurance Council, 1952.

Tables 1 and 2 indicate the enrollment growth during 1951 as well as the 1951 enrollment by type of underwriting agency.

Figures quoted in the current survey include persons protected by all types of voluntary agencies. This brings together under one study the number of persons protected by plans approved by medical societies (including Blue Shield), private insurance companies, Blue Cross plans, and independent plans. For the purposes of the survey, independent plans include industrial, community, consumer-sponsored, private group clinics, and university health programs. Excluded from the figures reported in the survey are those persons protected by workmen's compensation, those who have total and permanent disability benefits under life insurance programs, and those with commercial accident policies providing indemnity for accidental injuries, group accidental death and dismemberment insurance, commercial travel accident policies, as well as the vast number of persons protected under automobile personal injury policies and those who are protected by automobile medical payments provisions, residence liability, and other types of liability policies.

Also excluded from the figures contained in the current survey are many persons who are covered solely under government insurance as well as a number of persons receiving hospital and other medical benefits because of present or past service in the armed forces and those who receive health care at public expense in public institutions. The survey also indicates that some 39,702,000 workers out of the nation's 61,000,000 employed civilians were protected against loss of income due to disability.

Although the present enrollment figures are impressive, they are even more impressive when contrasted with the figures of a decade ago. In this regard there are now approximately 70 million more persons carrying hospitalization expense protection than was the case at the close of 1941. The number of persons covered by surgical expense benefits is approximately 62 million more than in 1941, while the survey estimates an increase of 24 million over the past 10 years in the number of persons carrying medical expense protection.

The members of the Survey Committee are to be congratulated on the thoroughness with which they have undertaken their task. It is generally recognized that there are persons who are protected under more than one type of program. The committee has taken precautions to avoid counting the same persons more than once in tabulating the results of the survey. The methods by which duplication of coverage has been minimized are set forth more completely in part 3 of the 1952 revision. In spite of the care that has been taken to collect all possible data and also to avoid duplication, the Health Insurance Council believes that the total figures represented in the following tables may be understated. In the words of the Health Insurance Council, ". . . Collection of data has been difficult because of the number and variety of organizations, many of them local in character, that provide protection against the expenses of sickness and accident. It is probable that the survey understates the full extent of accident and health protection in the United States. Some organizations providing such protection have probably been omitted, despite intensive efforts on the part of the Council to seek out every source of information and data on this subject. Many of the figures are necessarily estimated, but every care has been taken to produce estimates which are conservative in the light of the most reliable data obtainable."

TABLE 2.—*Persons in Continental United States Carrying Some Type of Hospital, Surgical, or Medical Expense Benefit Insurance on December 31, 1951, by Type of Agency* *

Type of Agency	Type of Benefit		
	Hospital	Surgical	Medical
Insurance companies			
Group	26,663,000	26,376,000	7,946,000
Individual (nongroup)	21,574,000	16,395,000	4,230,000
Total insurance companies	48,237,000	42,771,000	12,176,000
Blue Cross plans and plans approved by Medical Societies (including Blue Shield)	40,933,000	24,095,000	14,347,000
Independent plans	3,531,000	2,790,000	2,791,000
Grand total	92,701,000	69,656,000	29,314,000
Deduction for estimated duplication	6,710,000	4,121,000	1,591,000
Net total	85,991,000	65,535,000	27,723,000

* Source: Survey Committee of the Health Insurance Council: Accident and Health Coverage in the United States, New York, Health Insurance Council, 1952.

As in the past, the Council on Medical Service of the A. M. A. contemplates distribution of copies of the survey along with "Voluntary Prepayment Medical Care Plans" and the supplemental pamphlet of charts and graphs to members of the House of Delegates, officers of the Association, offices of constitutent associations, as well as offices of component societies having executive secretaries. In addition, the Council plans to send the above mailing to the prepayment plans, medical schools, and all hospitals affiliated with medical schools. The Council on Medical Service will be able to supply a limited number of additional copies of the survey on request. Quantity orders should be directed to the Health Insurance Council, Room 800, 488 Madison Ave., New York 22.

1. The Health Insurance Council functions on behalf of the insurance business as a central source for practical and technical guidance on the development and use of accident and health coverages: (1) to associations of the medical profession and (2) to hospital administrators located in specific areas. The Health Insurance Council is made up of the following organizations: American Life Convention, American Mutual Alliance, Association of Casualty and Surety Companies, Association of Life Insurance Medical Directors, Bureau of Accident and Health Underwriters, Health and Accident Underwriters Conference, International Claim Association, Life Insurance Association of America, and the Life Insurers Conference. The Council on Medical Service of the A. M. A. and its Committee on Prepayment Hospital and Medical Service maintain frequent contact with the Medical Liaison Committee of the Health Insurance Council, the Blue Shield Commission, and others for the purpose of studying and promoting sound development of all forms of voluntary health insurance coverage.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Malpractice: Death Following Ether Anesthetic.—The plaintiff sued for damages for the death of his daughter alleged to have been caused by the negligence of the defendant physician. From a verdict and judgment in favor of the plaintiff, the defendant physician appealed to the supreme court of North Carolina.

The plaintiff's evidence was to the effect that pursuant to prior arrangements the defendant, Joyner, performed a tonsillectomy on the plaintiff's daughter on Dec. 20, 1948. The daughter was carried to the operating room about 9:30 a. m. Although the operation was completed about 10:30, she was not taken to her room until 11:30. At that time she was in a comatose state. She remained in that state until about 5:45 a. m. the next morning, when she died. After reaching her room, she did not move until spasms set in later. She was hot and feverish, her temperature going up to 107 F. Although the child's mother made repeated efforts through the nurses to get in touch with Dr. Joyner, he did not visit the patient until about 5:15 p. m. He then did nothing for her; he just stood and looked at her about five minutes. Glucose was administered at about 5:30 under Dr. Joyner's orders. He returned about 7:00 p. m. The patient was then having spasms. He did nothing then but returned about 9:00 or 9:30 p. m. The nurses began to administer oxygen about 7:40 p. m. Dr. Joyner returned about 12:00 midnight. He left the hospital for home to get some rest about 2:30 a. m. The patient's mother asked him why he did not come and attend to Judith. He said he was so busy that he just did not have the time to attend to her. On the day before the operation the mother of the deceased had told the defendant that the girl had a cold and her nose was running. The defendant said that he would have to operate the next day because he was leaving town, and it did not matter that she had a cold. The mother told him that she wanted her physician to administer the anesthetic. Dr. Joyner said no; they had a man to do the work, and he would use him. The plaintiff's medical evidence indicated that it was not good medical practice to leave a patient unseen for a period of five or six hours after an operation. The physician should see that the patient is in good condition. It is bad medical practice to administer ether and operate while the patient has a cold. It is hazardous because it is likely to cause the infection to spread into the lungs, causing either pneumonia or a collapse of the lungs. He is apt to die a typical anesthesia death. After death the lungs of the plaintiff's intestate revealed numerous areas where the air sacs were filled with pus cells. Pus also appeared in the bronchial tubes. There was evidence of limited pneumonia and also edema. A person who is allergic to ether dies from its use almost immediately, sometimes even before an incision can be made. Postoperative hyperthermia follows convulsions caused mostly by ether. When a patient remains in a comatose state for more than one and one-half or two hours after ether is administered, there is cause for alarm. The physician should immediately begin to administer oxygen, examine the patient for shock, and take other precautions, keeping in constant touch with the patient. The plaintiff's daughter died from cerebral edema due to anoxia, that is, lack of oxygen. This was in all probability caused by anethesia. On the basis of the above evidence the jury found in favor of the plaintiff.

In former decisions, said the supreme court, we have fully discussed the requisite standard of learning and skill and the duty of a physician or surgeon who undertakes to render professional services to a patient. Briefly stated, it comes to this: (1) He must possess the degree of professional learning, skill, and ability that others similarly situated ordinarily possess; (2) he must exert his best judgment in the treatment and care of his patient; and (3) he must exercise reasonable care and diligence in the application of his knowledge and skill to the patient's case. There is no evidence in the record, the court continued, to show that the defendant did not possess the requisite knowledge and skill. The plaintiff does not seriously contend to the contrary. The plaintiff's case is made to rest on the allegation that the defendant, in treating the plaintiff's daughter, failed to exercise reasonable care and skill in the application of such knowledge and skill and the evidence in support thereof. To make out his case he must not only prove that the defendant was negligent in this respect but also that such negligence was the proximate cause or one of the proximate causes of the death of his daughter.

The courts generally recognize that the science of medicine is an experimental science, and they have been extremely careful to protect physicians and surgeons against verdicts resting on nonexpert testimony in those cases in which nonexpert testimony could constitute nothing more than mere conjecture or surmise and in which only an expert could give a competent opinion or draw a reliable inference. Yet, this court has not and could not go so far as to say that in no event may a physician or surgeon be held liable for the results of his negligence unless the causal connection between the negligence and the injury or death be established by the testimony of a brother member of defendant's profession. Indeed, we doubt that a physician or surgeon could be found who would be willing to testify unequivocally, in any case, that if he had been present he could have prevented the injury or death. In any event, such a rule would erect around the medical profession a protective wall that would set it apart, freed from the legal risks and responsibilities imposed on all others. It is true, it has been said, that no verdict affirming malpractice can be rendered in any case without the support of medical opinion. Rightly interpreted and applied, said the supreme court, the doctrine is sound. Opinion evidence may be founded on expert knowledge. Usually, what is the standard of care required of a physician or surgeon is a question concerning highly specialized knowledge with respect to which a layman can have no reliable information. As to this, both the court and jury must be dependent on expert testimony. Ordinarily, there can be no other guide. For that reason, in many instances, proximate cause can be established only through the medium of expert testimony. There are other cases, however, in which nonexpert jurors of ordinary intelligence may draw their own inferences from the facts and the circumstances shown in evidence. When the standard of care, that is, what is in accord with proper medical practice, is once established, departure therefrom may, in most cases, be shown by nonexpert witnesses.

In the present case, in the type of evidence offered, the plaintiff has met the test. What the approved practice and the approved treatment are under the circumstances disclosed by the plaintiff's evidence as well as the probable cause of death have been established, at least prima facie, by expert testimony. Failure of the physician to follow the approved practice and administer the approved treatment with ordinary care and diligence is made to appear by lay testimony. The plaintiff's expert testimony tends to show that it is bad practice to administer ether to a person who is suffering from a common cold. The mother of the deceased informed the defendant physician that the child then had a cold. It was not essential that the plaintiff prove that the defendant failed to make an examination to discover what he already knew. Because of allergy and the varying conditions of the human system, the reaction of a particular person to a specific drug is not always predictable. Ether, when administered in a careful manner and in an acceptable dosage, may sometimes cause the death of a patient. In such cases, however, the patient will die almost instantly. The plaintiff's daughter lived approximately 20 hours. Thus, death from abnormal reaction in the nature of an allergy is eliminated. It follows, the court concluded, that the plaintiff's evidence standing alone is fully sufficient to support the inference of actionable negligence. The weight and credibility of the defendant's evidence are jury questions. Whether it is sufficient to rebut the evidence offered by the plaintiff is for the jury to decide. Hence, what inferences and deductions should be drawn from the testi-

mony, when considered as a whole, was for the jury to decide under proper instructions from the court. Accordingly, the judgment of the trial court, based on the jury's verdict in favor of the plaintiff, was affirmed. *Jackson et al. v. Mountain Sanitarium & Asheville Agriculture School et al., 67 S.E. (2d) 57 (North Carolina, 1951).*

Scientific Tests: Use in Court of Results of Electroencephalogram.—The defendant, after being convicted of assault and battery and reckless driving, appealed to the superior court, appellate division, New Jersey.

The state proceeded against the defendant on the theory that he was intoxicated and produced numerous witnesses who testified that in their opinion the defendant was under the influence of intoxicating liquor at the time of the accident. The physician who examined the defendant at police headquarters immediately after the accident, however, testified that the defendant was sober, and it was the defendant's contention that he was ill, not intoxicated, and that his illness had caused him to "black out." In support thereof, the defendant called Dr. Effron, a qualified neurologist and psychiatrist, who testified that he had examined the defendant on two different occasions prior to the accident for treatment of his condition and that he had obtained a history from him and performed electroencephalography on him. An electroencephalogram, the physicians explained, discloses any abnormalities in brain wave pattern and ordinarily will reveal whether one has suffered a stroke depending on the part of the brain involved. The trial court, over objection, refused to permit Dr. Effron to testify as to the results of the electroencephalogram, particularly with respect to the existence of a disease of the brain at the time of the accident.

As a general proposition, said the court, it may be said that any legally competent evidence which, when taken alone or in connection with other evidence, affords reasonable inferences on the matter in issue, tends to prove or disprove a material issue or defeat the rights asserted by one of the parties, and sheds any light on or touches the issues in such a way as to enable the jury to draw a logical inference with respect to the principal fact in issue is relevant and admissible. Testimony was adduced that indicated that the defendant, prior to the accident, was suffering from high blood pressure. Evidence tending to show the effect, or possible effect, of that disease on the defendant at the time of the accident would, if not excluded for remoteness or conjecture, have been admissible to explain his condition or to support his allegation of having "blacked out." The question of excluding evidence because of remoteness, the court continued, rests largely on the sound discretion of the trial judge, but remoteness is a matter of degree. The term is one that has regard to factors other than mere lapse of time, and it is said that, while time may be a practically controlling feature in some situations, comparatively few generalizations based on lapse of time alone can be safely made. Even when the evidence is remote, the question must be determined by the circumstances. In a prior case with respect to the admission of expert opinions concerning the relation to the incident in question of facts found at a subsequent date, it was said, "In principle its admission as legal evidence is based upon the theory that the evolution in practical affairs of life, whereby the progressive and scientific tendencies of the age are manifest in every other department of human endeavor, cannot be ignored in legal procedure, but that the law in its efforts to enforce justice by demonstrating a fact in issue, will allow evidence of those scientific processes, which are the work of educated and skillful men in their various departments and apply them to the demonstration of a fact, leaving the weight and effect to be given to the effort and its results entirely to the consideration of the jury." Of course, we are unable to say, said the court, whether Dr. Effron's testimony would reveal a physical impairment or condition at the time of the accident that might have a bearing on the defendant's alleged "black out"; however, in view of the sharply disputed question of his sobriety, the defendant was entitled to have the benefit of Dr. Effron's testimony, so that the jury might determine whether the loss of control of his car was causally related to some physical impairment or the result of intoxication. We are satisfied that the exclusion of Dr. Effron's testimony was erroneous and affected the defendant's substantial rights. Accordingly the defendant's conviction was reversed. *State v. Shiren, 83 A. (2d) 620 (New Jersey, 1951).*

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

ADDITIONAL HOSPITALS REGISTERED

The following hospitals were registered by the Council on Medical Education and Hospitals of the American Medical Association at its meeting in Chicago, June 6, 1952:

Perry County Hospital, Marion, Ala.
Winfield Hospital, Winfield, Ala.
Crittenden Memorial Hospital, West Memphis, Ark.
Northern Inyo County Local Hospital District, Bishop, Calif.
Corning Memorial Hospital, Corning, Calif.
Santa Anita Hospital, Lake Arrowhead, Calif.
Cedar Lodge Convalescent Hospital, Los Angeles
Westover Sanitarium, Los Angeles
Loveland Memorial Hospital, Loveland, Colo.
New Britain Memorial Hospital, New Britain, Conn.
Mount Vernon Hospital, Washington, D. C.
Palm View Hospital, Bradenton, Fla.
Washington County Hospital, Chipley, Fla.
Palms Memorial Hospital, Fort Lauderdale, Fla.
Miami Heart Institute, Miami Beach, Fla.
American Legion Auxiliary Crippled Children's Home, Pensacola, Fla.
Mitchell County Hospital, Camilla, Ga.
Lee M. Happ Memorial Hospital, Hiawassee, Ga.
McDuffie County Hospital, Thomson, Ga.
Madison Memorial Hospital, Rexburg, Idaho
Memorial Hospital, Jasper, Ind.
Starke Memoral Hospital, Knox, Ind.
Kiowa County Memorial Hospital, Greensburg, Kan.
Kearny County Hospital, Lakin, Kan.
District One State Tuberculosis Hospital, Madisonville, Ky.
Robinson Infirmary and Clinic, New Orleans
Brook Lane Farm, Hagerstown, Md.
Isham Infirmary, Andover, Mass.
Sammond Pleasant Lodge, Romeo, Mich.
Triumph-Monterey Community Hospital, Triumph, Minn.
Coahoma Clinic and Hospital, Clarksdale, Miss.
S. E. Lackey Memorial Hospital, Forest, Miss.
Okolona Community Hospital, Okolona, Miss.
Butte Community Memorial Hospital, Butte, Mont.
Community Memorial Hospital, Hamilton, N. Y.
Frances Schervier Home and Hospital, New York
Clifton-Fine Hospital, Star Lake, N. Y.
Delaware Valley Hospital, Walton, N. Y.
Swain County Hospital, Bryson City, N. C.
St. Joseph's Community Hospital, Grafton, N. D.
Columbus Receiving Hospital, Columbus, Ohio
Sanor Eye, Ear, Nose and Throat Hospital, Columbus, Ohio
Madison Hospital, Mansfield, Ohio
Oak Hill Hospital, Oak Hill, Ohio
Dunlap Memorial Hospital, Orrville, Ohio
Loris Community Hospital, Loris, S. C.
Finger Clinic Hospital, Marion, S. C.
McLaughlin Community Hospital, McLaughlin, S. D.
Wagner Community Memorial Hospital, Wagner, S. D.
Memorial Hospital, Chattanooga, Tenn.
Munal Clinic-Hospital, Kingsport, Tenn.
Lawrence County General Hospital, Lawrenceburg, Tenn.
Valentine-Shults Hospital, Newport, Tenn.
Simonton Clinic and Hospital, Portland, Tenn.
Goodall Clinic-Hospital, Smyrna, Tenn.
Lowry Clinic Hospital, Sweetwater, Tenn.
Angleton Clinic-Hospital, Angleton, Texas
Veterans Administration Center, Bonham, Texas
Bryan Hospital, Bryan, Texas
G. L. Prince Hospital, Crockett, Texas
Bruce Eye, Ear, Nose and Throat Hospital, Greenville, Texas
Boyd Sanitarium, Hillsboro, Texas
Children's Hospital and Clinic, Lamesa, Texas
Lillian M. Hudspeth Memorial Hospital, Sonora, Texas
Young Medical Center, Sweetwater, Texas
Leon Memorial Hospital, Tomball, Texas
Guggenheimer Memorial Hospital, Lynchburg, Va.
Community Hospital, Martinsville, Va.
Garfield County Hospital, Pomeroy, Wash.
Memorial Hospital, Pullman, Wash.
Snohomish General Hospital, Snohomish, Wash.
Memorial Hospital, Charleston, W. Va.
Northwoods Hospital, Phelps, Wis.
Tomah Memorial Hospital, Tomah, Wis.
Memorial Hospital of Uinta County, Evanston, Wyo.
Memorial Hospital of Fremont County, Riverton, Wyo.
Clinica Fajardo, Fajardo, P. R.
Clinica Eugenio Fernandez Garcia, Hato Rey, P. R.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Internal Medicine, Chicago

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Syphilis: Review of Recent Literature. H. Beerman, W. T. Ford, L. Nicholas and L. Katzenstein.—p. 464.

Clinical Use of Fat Injected Intravenously.—Neither pyrogenic nor other untoward responses were observed when 35 patients were given fat emulsions intravenously. Fifteen of the 35 received 5 to 36 separate infusions; each received at least 500 cc. and several as much as 2,000 cc. at one time. The preparations contained fat in concentrations of 10, 12.5 and 15%, providing 1,100, 1,325, and 1,600 calories per liter. The fat emulsions were prepared by homogenization, utilizing a phosphatide stabilizer and a co-stabilizer in low concentrations. The resulting preparation contains particles averaging less than 1μ in diameter and is stable to autoclaving. The authors point out that an inadequate caloric intake for a short time is not necessarily harmful. However, in the chronically ill patient reserves of fat are at a minimum. If total parenteral feeding is needed for a prolonged period, a patient's survival may depend on the number of calories that can be administered, and fat given intravenously may play a decisive role. A case is reported to illustrate this. A liter of fat emulsion providing 1,600 calories can be given in 120 minutes or less. Clearance of fat from the blood stream usually is complete after four or five hours. There was no clinical evidence of ketosis during or after fat administration, and among the hundreds of patients who have received fat intravenously, there never has been a fatality attributable to the preparation. Liver function tests have failed to disclose evidence of liver damage due to the fat preparation. Untoward effects have been observed previously. Certain batches of fat emulsion have proved pyrogenic, others nonpyrogenic. Nausea, followed occasionally by transient vomiting has been a rare occurrence. Other side-effects have included transient flushing of the face and neck and moderate fluctuations in blood pressure. Apparently tachyphylaxis occurs after a small amount of the preparation has been administered, and the vasomotor reactions do not recur with early subsequent administration of the fat emulsion. Most of the untoward effects described are probably due to occasional impurities.

Use of Triethylene Melamine in Neoplastic Diseases.—In a previous report Wright and associates had demonstrated that triethylene melamine, which was developed for crease-proofing cloth and showed growth-inhibitory properties in tumors in animals, had beneficial effects in the treatment of 14 human beings with neoplastic diseases. In this paper they report on the use of this chemotherapeutic agent in an additional 28 adults with neoplastic diseases. Improvement was observed in 18 of the 42 patients. No beneficial results were observed in 24 patients. The most dramatic improvement was noted in patients with lymphosarcoma, Hodgkin's disease, chronic myelogenous leukemia, and chronic lymphatic leukemia. Moderate improvement occurred in patients with fibrosarcoma, reticulum cell sarcoma, and mycosis fungoides. No improvement was observed in patients with carcinoma. A close correlation was observed between the reaction of human tumors in tissue culture subjected to triethylene melamine and the same tumors in the patients treated with triethylene melamine. The citrovorum factor was used in two cases to correct the leukopenia that developed after treatment with triethylene melamine.

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American Journal of Medical Sciences, Philadelphia

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*Evaluation of Diagnostic Methods in Diseases of Thyroid Function, with Particular Reference to Radioiodine Tracer Tests. B. Roswit, J. A. Rosenkrantz, J. Sorrentino and others.—p. 229.
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*Preliminary Report of Antirheumatic Action of Heparin and Paritol-C in Gout and Rheumatoid Arthritis. G. W. Howe, C. A. Armbrust Jr., M. D. Levy Jr. and E. L. Wagner.—p. 258.
Use of Mercurial Diuretics in Treatment of Bromide Intoxication. A. E. Hussar and H. L. Holley.—p. 262.
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Changing Concepts of "Xanthomatous Biliary Cirrhosis." H. Shay and C. Harris.—p. 286.
Review of Literature on Preoperative Prophylaxis of Bowel with Antibacterial Agents. M. I. Riddell.—p. 301.
Biological and Social Sciences in Epidemiology of Mental Disorder. J. E. Gordon, E. O'Rourke, F. L. W. Richardson Jr. and E. Lindemann.—p. 316.

Radioiodine in Diagnosis of Thyroid Disease.—Initial history and physical examination, basal metabolic rate, serum cholesterol level, radioiodine uptake by the thyroid at 24 hours, and radioiodine urinary excretion level at 24 hours were the diagnostic methods employed in 135 men and 6 women between the ages of 21 and 69 with syndromes suggesting disturbances of

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Titles marked with an asterisk (*) are abstracted.

thyroid function. Of the 141 patients, 100 were euthyroid persons, 37 hyperthyroid, and 4 hypothyroid. The disproportionate number of women is accounted for by the predominantly male character of the Veterans Administration Hospital population. The two radioiodine tracer techniques were evaluated as aids to the clinician in the diagnosis and differential diagnosis of thyroid malfunction in the patients reported on, and the diagnostic accuracy of the radioiodine uptake and excretion tests was compared with that of the initial history and physical examination, the basal metabolic rate, and the serum cholesterol level. Results showed that the radioiodine tracer tests, for which doses of 50 to 100 μc of I^{131} were employed, proved far superior to the basal metabolic rate and serum cholesterol determinations, which give only limited aid in differential diagnosis of thyroid dysfunction because endocrine, neuropsychiatric, and cardiovascular disorders often masquerade as diseases of thyroid origin. Despite the use of radioiodine tracer tests, hyperthyroidism and euthyroidism could not be differentiated in a certain number of persons. This appears to be due to extraneous factors and not to biological variations in function of the thyroid gland. There is still need for a method of direct measurement of the iodine-accumulating function of the thyroid that is independent of extraneous factors such as renal function. Diagnostic accuracy with radioiodine tracer methods may be improved by further study of thyroid iodine clearance rate rather than by refining the precision of available methods. A consideration of safe dosage factors is included.

Anticoagulant Treatment in Gout and Rheumatoid Arthritis.—The anticoagulants heparin and a polysulfuric acid ester of polyanhydromannuronic acid (paritol-C®) were used in the treatment of 13 patients with various rheumatic disorders. Of the 13 patients, 5 had acute, nontophaceous gouty arthritis, 6 had active subacute rheumatoid arthritis, and 2 had acute nonspecific arthritis. Heparin was given subcutaneously in doses of 200 to 300 mg. every 12 hours. Paritol® was injected intravenously in doses of 3 to 4 mg. per kilogram of body weight in 5 or 10% solution every 12 to 24 hours for varying periods, depending on the response. Complete remission of clinical signs and symptoms occurred in the five patients with gout, one of whom had been unresponsive to classical therapy. Five of the six patients with rheumatoid arthritis reported subjective improvement with either heparin or paritol.® Four patients showed objective improvement in 40 to 96 hours, manifested by a decrease in swelling of actively involved joints. One patient had no decrease in swelling while receiving heparin, but responded to paritol.® The anticoagulant drugs heparin and paritol® thus have a definite antirheumatic effect. The mechanism of their action is unknown.

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Tuberculosis of Myocardium: Report of Case Exhibiting Changing Types of Heart Block. I. Rose.—p. 332.
Agranulocytosis Due to Amithiozone Therapy. D. V. Preheim and M. E. Peck.—p. 339.

Failure of Neomycin in Tuberculous Meningitis.—Three children between the ages of 2 and 4 years with tuberculous meningitis were treated with 0.25 gm. of neomycin B, containing 240 Waksman units per milligram, intramuscularly every 12 hours for 26 to 39 days. Each patient also was given streptomycin, 1 gm. intramuscularly every 24 hours, and two patients received in addition 25 mg. intrathecally every 24 hours. There was no evidence that neomycin supplemented the therapeutic action of streptomycin. Death occurred sooner than might have been expected had streptomycin alone been used for the treatment of tuberculous meningitis. An ototoxic effect of neomycin was not observed. One patient showed local irritation at the sites of neomycin injection. While none of the patients had demonstrable nitrogen retention during life, postmortem examination revealed that in each case neomycin had produced a severe toxic nephrosis, characterized by necrosis and sloughing of the proximal tubular epithelium. Until less toxic samples of neomycin can be prepared, this drug does not appear to have a place in the treatment of even this most deadly form of tuberculosis.

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Surgery for Mitral Stenosis. Review of Progress. E. F. Bland.—p. 290.

Acute Atypical Coronary Artery Insufficiency.—The greatest difference between acute atypical coronary disease (coronary failure, subendocardial necrosis, and small or obscure myocardial infarctions) and classic myocardial infarction is the lower death rate and benign course of the atypical forms. Coronary failure occurs when an inelastic coronary system is unable to meet increased demands. The actual process is believed to be a prolonged but reversible myocardial ischemia. The pain it causes is severer and more lasting than that of angina pectoris and is not relieved by rest or glyceryl trinitrate (nitroglycerin). Blood pressure is maintained and friction rubs do not develop. Electrocardiographic changes either do not occur or are slight and transient, as in angina. Subendocardial necrosis without coronary occlusion commonly occurs when the coronary vessels are sclerotic and only rarely when they are normal. Stimuli such as emotion, hemorrhage, shock, sustained effort, tachycardia, toxic substances, or further coronary narrowing may lead to a state of myocardial hypoxia, which, if not promptly relieved, goes on to persistent cardiac pain and eventual necrosis of heart muscle. Destructive changes occur in papillary muscles and in the central myocardium, where the blood flow is low. The endocardial injury may be diffuse or focal, but the endocardial lining is spared and there is no mural thrombosis. The outer myocardium remains intact and pericardial phenomena do not develop. Electrocardiographic changes, consisting of S-T segment depressions with or without T-wave inversions, are said to be diagnostic. Atypical myocardial infarction is characterized by pain that begins without relation to physical effort and lasts for more than 15 minutes. There is no heart failure or peripheral shock. Symmetric T-wave inversions that persist indefinitely appear in the electrocardiogram, either initially or, oftener, slowly over a period of days or weeks. Analysis of 207 consecutive cases of acute coronary artery insufficiency showed 59 atypical forms: 29 cases of coronary failure, 19 of subendocardial necrosis, and 11 of atypical myocardial infarction. Differentiation should be based on electrocardiographic interpretation and treatment should be individualized accordingly. Serious disease necessitates long bed rest and the protection of anticoagulants, but forms of coronary insufficiency with a low mortality and few complications do not need prolonged hospitalization or treatment. The degree of cardiac neurosis suffered by coronary disease patients is directy related to the length of hospitalization.

Therapeutic Range of Amorphous "Gitalin".—Amorphous "gitalin" (a digitalis glycoside) has a greater therapeutic range than other digitalis preparations and can be used with greater safety for either initial digitalization or maintenance. The percentage of a digitalis preparation required for a therapeutic effect in terms of the total dose required for toxicity represents the therapeutic ratio; the smaller the ratio the greater the range. The usual patient with congestive heart failure requires approximately 60% of the toxic dose of either digoxin or digitoxin, which have similar ratios, to attain a therapeutic effect. Patients with advanced heart disease may require doses approaching or equalling the toxic dose, so that the therapeutic range is reduced or even abolished. The greater therapeutic range of amorphous "gitalin" (therapeutic dose approximately one-third of the toxic dose) makes digitalization attainable in many of these difficult cases; only when toxicity is manifested before any therapeutic effect becomes discernible does satisfactory digitalization become impossible. The dissipation rate of amorphous "gitalin" lies between those of digoxin and digitoxin; this facilitates satisfactory maintenance. Inadequate maintenance resulting from rapid dissipation, as in the case of digoxin, is unlikely, and any manifestations of toxicity will subside more quickly than those noted with digitoxin. Amorphous "gitalin" has a high degree of uniformity in potency and absorption, assuring satisfactory digitalization and maintenance with predictable doses. The authors believe these advantages make "gitalin" the digitalis preparation of choice in congestive heart failure.

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Inhalation of Alcohol Vapor in Acute Pulmonary Edema.—The high mortality associated with conventional methods of treating acute pulmonary edema and the fact that they are contraindicated in shock, the presence of central nervous lesions, or pregnancy led to trials with antifoaming agents by inhalation. Four methods of alcohol inhalation were tried. The two most practical employed a nasal catheter and a positive pressure mask. The amount of alcohol in the blood was small and its general effects were negligible. Alcohol vapor was administered to 14 patients during 17 acute attacks of pulmonary edema. In all except three cases alcohol was given after failure of routine medication. In 10 of the attacks the beneficial effect was prompt and marked; in five others there was definite improvement. No improvement was noted in two attacks but in one the patient did not tolerate alcohol, and in the other the patient objected to alcohol at first and possibly received an inadequate dose. One patient died four hours after treatment was discontinued. Alcohol vapor was also administered to seven patients with severe prolonged pulmonary edema. Marked improvement occurred in one, slight to moderate improvement in two, and doubtful result or no improvement in four. In three, evidence of decrease of the foaming process was noted even though the fatal course of

the underlying disease was not modified. This study indicates that alcohol inhalation has a favorable effect in clinical pulmonary edema, particularly of the acute paroxysmal variety.

Serum Lipoproteins and Atherosclerosis in Rabbits.—By means of the analytic ultracentrifuge several classes of giant, cholesterol-bearing lipoproteins have been identified in the serum of humans and animals. The S_f 10-20 class of molecules has been correlated with atherosclerosis in humans, and a corresponding S_f 10-30 class has been observed in rabbits with atherosclerosis. Normal rabbits have a negligible concentration of lipoproteins in their serum, with the exception of the S_f 3-12 class, but when they are fed cholesterol, the lipoproteins of the S_f 3-12 class increase progressively in concentration until a critical value is reached. Then lipoproteins of successively higher S_f classes begin to appear, and finally the entire spectrum of lipoproteins is present in large quantity. Duff and others had noted extreme turbidity of the serum and elevation of the cholesterol level in the alloxan-diabetic rabbit fed cholesterol, and yet atherosclerosis does not develop. Experiments described in this paper revealed that the alloxan-diabetic rabbit that is fed cholesterol develops extreme lipemia and hypercholesteremia and still has a smaller degree of atherosclerosis than a normal rabbit that is fed cholesterol, that is, there is a negative correlation between atherosclerosis and serum cholesterol levels. There is, however, a positive correlation between the presence of lipoproteins of the S_f 12-30 class and atherosclerosis in these animals. No other class of lipoproteins correlates as well with atherosclerosis as does the S_f 12-30 class, and, in fact, a significant negative correlation exists between atherosclerosis and lipoproteins of S_f greater than 100. The high correlation between total serum cholesterol and lipoproteins of S_f greater than 100 in the alloxanized rabbit, together with the high proportion of cholesterol transported in this form, provides an explanation of lack of positive correlation between serum cholesterol and atherosclerosis. Molecules above S_f 100 are intensely light-scattering and, since they are generally in high concentration in the serum of the alloxanized rabbit fed cholesterol, the extreme turbidity is explained. The alloxan diabetic animal seems to have a metabolic block in the conversion of lipoproteins of S_f 80-100 and above into lipoproteins of lower S_f classes.

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Observations with Electron Microscope on Cells of Chick Chorio-Allantoic Membrane Infected with Influenza Virus. J. S. Murphy and F. B. Bang.—p. 259.
Factors Related to Growth of Psittacosis Virus (Strain 6BC): I. Pteroylglutamic Acid, Vitamin B_{12}, and Citrovorum Factor. H. R. Morgan. —p. 269.
Id.: II. Purines, Pyrimidines, and Other Components Related to Nucleic Acid. H. R. Morgan.—p. 277.
Study of Fixation for Electron Microscopy. G. E. Palade.—p. 285.
Experiments on Cause of Rabbit Carcinomas Derived from Virus-Induced Papillomas: I. Propagation of Several of the Cancers in Sucklings, with Etiological Tests. W. E. Smith, J. G. Kidd and P. Rous. —p. 299.
Evidence That Aschoff Bodies of Rheumatic Myocarditis Develop from Injured Myofibers. G. E. Murphy.—p. 319.

Journal-Lancet, Minneapolis

72:125-168 (March) 1952

Management of Ocular Injuries. J. P. Wendland.—p. 125.
Radiation Reaction in Small Bowel: Case Report. E. B. Coulter.—p. 133.
Antihistamines, Cortisone and ACTH in Respiratory Allergy. L. E Prickman, G. A. Koelsche, H. M. Carryer and others.—p. 135.
Urological Anesthesia. B. C. Corbus Jr. and A. D. Boyd.—p. 139.
Simplified Percutaneous Angiography. G. L. Smiley.—p. 141.
Psychotherapeutic Problems with University Students. S. H. Kaufman. —p. 142.
Medical Editors and Their Work. R. M. Hewitt.—p. 145.
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Erythema Multiforme Exudativum: Stevens-Johnson's Disease. H. W. Orme.—p. 152.

Journal of Nervous and Mental Disease, New York

115:189-282 (March) 1952

Effects of Frontal Topectomy on Autonomic Nervous System Stability in Schizophrenia. G. H. Glaser.—p. 189.
•The Frontal Lobes and Anguish: New Formulation of an Old Problem. C. Landis.—p. 203.
Psychology vs. Anatomy in Treatment of "Arm Neuroses" with Physiotherapy. T. Braatoy.—p. 215.
Artificial Ecstasy: Study of Psychosomatic Aspects of Drug Addiction. J. A. M. Meerloo.—p. 246.

The Frontal Lobes and Anguish.—Landis shows that psychosurgery has altered previous concepts of the functions of the human frontal lobes. The crucial change in persons who respond to psychosurgery is affective rather than intellectual. The significant alteration resulting from psychosurgery is a diminution in morbid emotionality, awareness, and zeal. The patients are more easygoing and lazy. The author refers to the change as a reduction in apprehensive dread or anguish. He also shows that anguish may be relieved in many mental patients by methods other than psychosurgery, particularly by the so-called shock methods of insulin, metrazol, and electroconvulsive therapy, by intravenous injection of certain of the barbiturates, or by psychotherapy. Some mental patients lose anguish spontaneously. This implies that anguish cannot be dependent on a specific frontal lobe area of tissue or a pattern of interconnected portions of tissue, for, if it were, the removal of tissue or cutting of interconnecting tracts would irrevocably remove the specific experience. Instead, if anguish returns, it takes the same form, that is, there is a relapse into psychosis or neurosis, or intractable pain. Since anguish cannot be associated with a specific portion of the brain, the author advances the theory that anguish depends on an undue physiological responsiveness of brain tissue to some agent carried to the brain by the blood stream. Since the agent is still hypothetical, the author refers to it as alpha. This agent sensitizes cortical tissue in persons who are susceptible, the susceptibility being activated largely by the influx of intraorganic sensory impulses probably projected from the thalamic nuclei.

Since electroconvulsive therapy often results in a loss or a great diminution of anguish, and since this therapy is widely used in the treatment of thousands of mentally ill patients, Landis suggests that an intensive interview study coupled with psychophysiological measurement of the temporal efficiency of the central nervous system before and after electroconvulsive therapy might yield interesting results.

Kansas Medical Society Journal, Topeka

53:45-104 (Feb.) 1952

X-Ray Pelvimetry in Private Practice. N. C. Siebert and C. M. White. —p. 45.
Field of Allergy. E. A. Brown.—p. 49.
Water Fluoridation for Partial Control of Dental Decay in Children's Teeth. W. R. Bellinger.—p. 54.
Neurovascular Syndromes of Shoulder Girdle. F. S. Morest.—p. 57.

Michigan State Medical Society Journal, Lansing

51:145-264 (Feb.) 1952

General Adaptation Syndrome. B. C. Lockwood.—p. 181.
Myotonia Congenita: Report of Four Cases in One Family; One with Autopsy Findings. W. H. Gordon, J. M. Kaufman and H. A. Kashton. —p. 188.
Political Vandalism Versus the Rights of the Individual. C. E. Umphrey. —p. 195.
Medicine is Arming for Atomic Defense. M. L. Lichter.—p. 200.
Pediatric Problems Arising from Atomic or Biological Warfare. F. H. Top.—p. 203.
Care of Cancer Patient. H. M. Nelson.—p. 209.
Hematoma of Rectus Abdominis Muscle During Pregnancy. M. S. Dennis.—p. 211.
Surgical Treatment of Pain. J. Martin.—p. 213.
First Use of Epinephrine (Adrenalin®) in Asthma. W. Haughey.—p. 216.
Know Your Government. J. B. Martin.—p. 217.

Military Surgeon, Washington, D. C.

110:165-248 (March) 1952. **Partial Index**

Symposium on Effects of Atomic Explosions. L. D. Cady and J. E. Miller.—p. 165.
Diarrheal Diseases in Military Medicine: Their More Effective Control in Forward Areas. R. A. Kern.—p. 171.
Surface Area Determinations of Three Prostatectomy Procedures. C. Ferguson and L. S. Santomieri.—p. 175.
Infection in Urinary Tract Calculi—Incidence and Management. J. C. Kimbrough and W. H. Morse.—p. 177.
Addison's Disease in Two Brothers; With Serum Hepatitis in One. T. W. Smith and A. R. Higgins.—p. 180.
Physiologic and Pathologic Effects of Implanted Body Armor Materials. S. W. Handford and F. J. Lewis.—p. 184.
*Relationship of Underarm Cosmetics to Hydradenitis Axillaris. I. Wirth. —p. 208.
Shoulder Straps for Aesculapius. J. E. King and D. F. Shea.—p. 209.

Underarm Cosmetics and Hydradenitis Axillaris.—Wirth believes there is frequently a causal relationship between abscess of the axillary sweat glands and the use of underarm cosmetics. He bases this belief on observations in 20 patients (12 women and 8 men) with hydradenitis axillaris, all of whom used underarm cosmetics. Two of them used a perfumed powder, while the remaining 18 used antiperspirants. Two patients were seen on a second occasion for the same condition, after they had resumed the use of a different antiperspirant. While the fact that all 20 patients had used underarm cosmetics is suggestive of a causal connection, it does not prove that the cosmetics caused the apocrine abscess. However, the predominance of women among patients with axillary hydradenitis in this and other reports is regarded as further proof of a causal role of underarm cosmetics, since more women than men use them.

Nebraska State Medical Journal, Lincoln

37:65-92 (March) 1952

Masking of Clinical and Hematological Findings by Cortisone and ACTH in Acute Leukemia in Childhood: Case Report. J. E. Meyer and F. H. Tanner.—p. 67.
Preparation of Thyrotoxic Patient for Operation. W. P. Kleitsch.—p. 68.
Case Report of Familial Polyposis of Colon. S. F. Moessner and R. G. Rice.—p. 73.
Neonatal Deaths and Stillbirths. S. T. Thierstein.—p. 76.
BCG Vaccination. W. J. Dickerson.—p. 78.
Public Health Education in Nebraska. N. Lamkin.—p. 80.

New England Journal of Medicine, Boston

246:281-316 (Feb. 21) 1952

Ebbs and Flows in Medical Interest. H. A. Christian.—p. 281.
Femoral-Shaft Fractures Treated by Medullary Nailing. E. F. Cave. —p. 284.
Chronic Pyelonephritis Simulating Adrenocortical Insufficiency. H. E. Nussbaum, W. G. Bernhard and V. D. Mattia Jr.—p. 289.
*Guillain-Barré Syndrome: Report of Case Treated with ACTH and Cortisone. J. S. Stillman and W. F. Ganong.—p. 293.
Comparison of Clinical Features of Poliomyelitis in Adults and in Children. L. Weinstein, A. Shelokov, R. Seltser and G. D. Winchell. —p. 296.

Corticotropin and Cortisone in Guillain-Barré Syndrome.—A variety of descriptive terms have been applied to the syndrome of diffuse peripheral neuropathy associated with albuminocytologic dissociation in the spinal fluid, including infectious neuritis, radiculomyelitis, polyneuritis with facial diplegia, and acute febrile polyneuritis. Stillman and Ganong feel that until the condition is better understood, there will be less confusion if the old term Guillain-Barré syndrome is continued. They describe the case of a man, aged 59, who had the syndrome and who was given corticotropin (ACTH). The patient showed improvement, but relapsed when his adrenal glands became unresponsive to this agent and again improved on cortisone. The response of this patient, in addition to other evidence, supports the hypothesis that some cases of the Guillain-Barré syndrome represent an allergic response of the nervous system to bacterial products. It is suggested that this reaction causes congestion and edema of the nerve roots, with secondary compression in their inelastic dural sheaths, and that adrenal steroids produce resorption of this edema and permit axon recovery, the speed of recovery depending on the duration of the compression.

Surgery, St. Louis

31:327-486 (March) 1952

Ten Years' Experience with Bleeding Peptic Ulcer with Emphasis on 45 Fatal Cases. N. Shapiro and L. Schiff.—p. 327.
Surgical Intervention in Massive Gastroduodenal Bleeding. F. H. Amendola.—p. 340.
Role of Trypsin in Pathogenesis of Acute Hemorrhagic Pancreatitis and Effect of Antitryptic Agent in Treatment. B. Rush Jr. and E. E. Cliffton.—p. 349.
Effect of Simultaneous Oral Administration of Aureomycin and Aluminum Hydroxide Gel on Fecal Urobilinogen. W. D. Hayford and B. A. Waisbren.—p. 361.
Prophylactic Use of Terramycin in Experimental Clostridium Welchii Infection in Guinea Pigs. W. R. Sandusky, C. F. Keeble, W. P. Wharton and R. N. Taylor.—p. 365.
Fibrotic Stenosis of Terminal Common Duct. P. F. Partington.—p. 367.
Occurrence in Surgical Patients of Severe Hypernatremia Without Exogenous Dehydration. B. Zimmermann and E. F. Freier.—p. 373.
*Carotid Body Tumors. J. W. Hendrick.—p. 385.
Autogenous Vein Grafts in Splenorenal Anastomosis: Description of Technique and Its Clinical Application in Seven Patients. L. M. Rousselot.—p. 403.
Experimental Studies with Intra-Arterial Transfusion: Overtransfusion of Normal Dog. E. J. Beattie Jr., J. R. Thistlethwaite, B. Blades and O. Wood.—p. 411.
Spinal Anesthesia: Analysis of Causes of Death in 716 Cases. P. H. Lorhan and W. Merriam.—p. 421.
*Agenesis of Right Lung: Report of Three Cases. L. B. Thomas and E. A. Boyden.—p. 429.
Intraintestinal Hemorrhage Following Total Pancreatectomy for Carcinoma of Pancreas: Report of Case. R. C. Lynch and D. M. L. Rosenberg.—p. 436.
Fibrosarcoma of Soft Somatic Tissues: Clinical and Pathologic Study. G. T. Pack and I. M. Ariel.—p. 443.

Carotid Body Tumors.—Tumors of the carotid body are located deep beneath the sternomastoid muscle in the bifurcation of the carotid artery at approximately the level of the hyoid bone. Essentially asymptomatic, and of a reddish brown color, they grow slowly, encircling the carotid vessels as they enlarge. They are unilateral or occasionally bilateral, and occur in both sexes at any age. Pain in the face, neck, and area of the middle ear, hoarseness, and occasionally dysphasia were the symptoms of the author's eight patients. In two of them microscopic examination revealed malignant change. Any slow-growing, painless tumor, 1 or 2 to 10 cm. in diameter, located deep in the upper anterior cervical triangle should be assumed to be a carotid body tumor unless proved otherwise. Roentgenograms are not,

as a rule, a diagnostic aid. Differential diagnosis should be made from bronchogenic cysts, aneurysm of the carotid artery, carcinoma, neurofibroma, metastases from carcinoma of the homologous lobe of the thyroid gland or from lesions above or below the clavicle, and tuberculous lymphadenitis. Small tumors of the carotid body that are diagnosed early may be removed without injury to, or ligation of, the common or internal carotid artery or both, whereas these may have to be ligated or resected when the tumors are larger or malignant. Systematic preoperative digital compression of the common carotid vessel at first for two or three minutes three to four times daily increasing gradually up to ten minutes four or five times daily is suggested to improve collateral circulation to the brain, thus minimizing the risk of hemiplegia. Anticoagulants may be useful as adjuvant therapy. During the operation on his patients the author injected a 1% procaine solution into the adventitia of the common carotid artery, and, in cases of larger tumors, into the stellate ganglions and the first and second cervical ganglions. The two patients with malignant tumors in whom he performed a radical neck dissection are both well more than five years after the operation. In bilateral tumors of the carotid body the more advanced of the two should be removed first. The effectiveness of roentgen therapy on these tumors is debatable. It may be indicated when a benign tumor cannot be removed without ligation or removal of the common or internal carotid artery.

Agenesis of Right Lung.—Agenesis of the right lung was found in three patients at the University Hospital of Minnesota during 1950-51. Death occurred in a 2-year-old boy during the removal of a kernel of corn from a bronchus. At autopsy the right lung and the right pleura were absent, and dissection of the enlarged left lung revealed three lobes with a cleft upper lobe. The second patient, a 16-day-old twin baby girl, died during operation for a tracheoesophageal fistula. At autopsy the left lung had a normal shape and three lobes; a cleft upper lobe was associated with an ectopic left pulmonary artery. The third patient, a full-term male infant, died one and one-half hours after birth. Autopsy revealed absence of the right lung and pleura and a constriction of the right ureter just below the ureteropelvic junction. There was also an additional digit at the base of the left thumb. Dissection revealed an incompletely divided left lung, with atypical branching of the bronchial tree, a rudimentary appendix at the site of bifurcation of the trachea (probably right bronchial bud), a retrobronchial left pulmonary artery, and coarctation of the aorta. The pronounced deviations in the bronchovascular patterns of the only lung and the association with congenital anomalies suggested that in these patients the process of normal development had been interfered with at the first lunar month. It was impossible to determine whether suppression of the right lung was caused by a genetic factor, a defective gene, or by an environmental factor such as a dietary deficiency in the mother that disturbed the chemistry of development.

Virginia Medical Monthly, Richmond

79:121-176 (March) 1952

Recognition and Management of Hypoglycemic States with Particular Reference to Islet Cell Tumors of Pancreas. C. G. Gaddy, W. Parson and H. B. Mulholland.—p. 124.
Expanding Field of Splenectomy for Hypersplenism. T. Fitz-Hugh Jr. and P. R. Evans Jr.—p. 132.
*Colitis Following Oral Administration of Aureomycin and Terramycin. C. C. Chewning Jr.—p. 136.
Prevalence of Microsporon Audouini Infections of Scalp in Charlottesville, Virginia. C. J. Young and D. C. Smith.—p. 138.
Electrocardiogram in Childhood. N. Bloom.—p. 140.
Fight Against Cancer and Some Other Chronic Diseases. C. C. Coleman and J. M. Hutcheson.—p. 145.
Melorheostosis Leri—Report of Case. W. M. Fitch and I. M. Bordelon. —p. 147.
Analysis of Cesarean Sections in General Hospital. S. E. Smith Jr. and J. R. Kight.—p. 149.

Colitis Following Oral Aureomycin and Terramycin.—Toxic reactions to aureomycin and terramycin administered orally include colitis, which is sometimes mild but frequently is severe enough to require hospitalization for three to four weeks. Proctoscopic findings showed erythema and edema of the rectal and sigmoidal mucosa in mild cases; in cases of moderate severity the mucosa was mottled, edematous, and friable, bleeding easily. The patients with severest disease showed multiple ulcerations, the lumen of the bowel containing pus, mucus, and blood. Pus and blood cells were found in the feces in the severe cases. Treatment for the mild forms consisted of paregoric or kaolin (kaomagma®) and paregoric given every four hours. The diet was bland, fat-free, and somewhat restricted in quantity. Patients requiring hospitalization received little or no food by mouth for two or three days. Intravenous feedings were given as needed. Paregoric or other opiates were used rather freely. Diarrhea and abdominal discomfort lasted several days to four weeks in the milder cases and two to four weeks in the severer ones. Recovery was complete. No satisfactory explanation of the pathogenesis of this colitis, which usually develops in from 3 to 14 days after discontinuance of the antibiotic, has yet been found. Effective methods of prevention and treatment have not been developed. The frequency of complications with aureomycin and terramycin therapy indicates that these medications should be restricted to cases in which they are unequivocally indicated.

Yale Journal of Biology and Medicine, New Haven

24:243-350 (Feb.) 1952. **Partial Index**

Laboratory and Community in Undergraduate Training of a Physician. J. M. Mitchell.—p. 252.
Self-Regulatory Feeding in Premature Nursery. F. H. Horton, L. O. Lubchenco and H. H. Gordon.—p. 263.
Vitamin D and Citrate Metabolism: Studies on Rachitic Infants. H. E. Harrison and H. C. Harrison.—p. 273.
Variations in Gag, Cough, and Swallow Reflexes and Tone of Vocal Cords as Determined by Direct Laryngoscopy in Newborn Infants. H. C. Miller, G. O. Proud and F. C. Behrle.—p. 284.
Studies in Congenital Cardiovascular Disease: IV. Impaired Pulmonary Diffusion of Oxygen in Persons with Left-to-Right Shunts. N. K. Ordway.—p. 292.
Tuberculous Meningitis in Children: Addition of 41 Proven Cases: Critical Analysis of Literature Dealing with Streptomycin Therapy Since Its Introduction. R. W. Sappenfield, V. G. Robinson and D. N. Walcher. —p. 309.
Passive Immunity to Vaccinia in Newborns: I. Placental Transmission of Antibodies. C. H. Kempe.—p. 328.
*Behavioural Response of Infants to Heat Stress. R. E. Cooke.—p. 334.

Response of Infants to Heat Stress.—In order to ascertain the influence of environmental temperature on food and water intake of infants, six normal infants ranging in age from 14 to 231 days were studied with no clothing except diapers in a room of controlled temperature, for periods of 20 to 180 days. The same nursing personnel provided a fairly satisfactory emotional environment for the babies. A program for complete ad libitum feeding of young infants both with respect to time and volume of feeding was followed. This program consisted of feeding the infant whenever hungry and offering as much as would be taken without urging. The criteria for deciding that an infant was hungry were active crying, not abolished by holding or changing of diapers, active sucking movements, and/or extreme restlessness and activity. At each feeding, boiled water was offered prior to the milk mixture. The infant was allowed to drink as much water as desired until the nipple was repeatedly rejected, and then a milk mixture was substituted. The baby was allowed to drink as much milk as desired until the nipple was again consistently rejected. Bottles of water and milk mixture were accurately weighed before and after each feeding. The environmental temperature was kept at 81 F during the control periods and at 91 F during the hot periods. The relative humidity ranged from 40 to 50%. An increase in water intake and fall in milk intake were noted on exposure to heat stress. The converse occurred when the room temperature fell. These reactions were less marked in the younger infants. The data obtained from these experiments suggest certain considerations of practical value in the care of infants in summer. Dilute feeding mixtures (50 calories per 100 cc., for example) should be used during heat stress rather than concentrated milk mixtures supplemented by water offered ad libitum after feedings, as is commonly practiced. By the use of a dilute feeding mixture an adequate intake of water in relation to calories, protein, and electrolytes is assured.

FOREIGN

Acta Chirurgica Scandinavica, Stockholm

102:321-404 (No. 5) 1952. **Partial Index**

*Hiatal Hernia, Brachyoesophagus and Incompetence of Cardia in Children. G. Pettersson.—p. 321.
Treatment of Congenital Atresia of Esophagus: Principles of New Method with Preliminary Case Reports. G. Pettersson and G. Haglund. —p. 327.
Congenital Atresia of Small Intestine in Children. G. Pettersson.—p. 331.
Treatment of Extroversion of Bladder with Coexisting Anal Incompetence. G. Pettersson.—p. 338.
*Cerebral Revascularisation: Critical Evaluation of 14 Operated Cases. I. Selley, G. Pettersson, H. Larsson and others.—p. 342.
Massive Brain Damage After Acute Anoxia. G. Haglund.—p. 364.
Development of Cancer in Gastric Ulcer and Ulcer Symptoms in Gastric Cancer. T. Ekström.—p. 387.

Incompetence of Cardia in Children.—The causes of vomiting in childhood are numerous and often difficult to determine. Disturbances in the cardia, the lower esophagus, and the closing mechanism of the cardia may play a part. If the cardial mechanism is disorganized, incompetence of the cardia develops. As a consequence, the acid stomach contents flow up into the esophagus, and esophagitis and peptic ulceration develop. The inflammatory changes and ulceration produce scar formation, i. e., transverse strictures and longitudinal shortening of the esophagus (brachyesophagus). The author distinguishes two types of incompetence of the cardia. In the first type, which he designates as simple cardial insufficiency, the anatomical relation of the three closing mechanisms is largely unchanged, dilatation or laxity of the cardia due to imbalance of its neurogenic control being the chief factor. In the second type, however, the closing mechanisms become disorganized and hiatal hernia and brachyesophagus exist. The diagnosis is based on the chief symptom, vomiting, and on the result of roentgenologic examination. The latter shows reflux of the radiopaque substance into the esophagus when the patient is in the horizontal or Trendelenburg position. In hiatal hernia the normal fundus bubble is often absent, and the stomach continues like a tent or an inverted funnel through the diaphragm. Of the eight cases reviewed by the author, two had the simple form of insufficiency. At the age of 14 months and 6 months, respectively, these patients were subjected to thoracotomy with narrowing of the hiatus. Crush of the phrenic nerve alone resulted in competence of the cardia and disappearance of the symptoms in three of the six children with hiatal hernia plus brachyesophagus. In the other three cases thoracotomy plus reposition of the stomach was performed. In two of these cases the phrenic nerve was also crushed. All patients are free of symptoms. Crush of the phrenic nerve had no effect in simple insufficiency of the cardia.

Cerebral Revascularization.—Selley and associates discuss the technique of "revascularization of the brain through establishment of a cervical arteriovenous fistula," which Beck, McKhann, and Belnap reported in September, 1949. These authors were of the opinion that the procedure was "the first successful attempt at correction of mental retardation on an organic basis." Selley and co-workers raise several questions with regard to this treatment and say that they studied the possibility of supplying arterial blood to the brain (revascularization) by means of arteriovenous shunt formation in 14 children with brain lesions. In three children a side-to-side anastomosis between the common carotid artery and the internal jugular vein, as suggested by Beck, was done, while in the others end-to-side anastomosis between the external carotid artery and the jugular vein was performed. The anatomical possibilities were studied by means of sinographic studies prior to operation. The effect of the shunt on the dynamics of the circulation was examined by means of angiographic studies and oxygen analyses both before and after operation. Psychiatric follow-up examinations in 10 cases revealed no tangible change in the mental condition of the children. As far as intelligence and behavior was concerned, "revascularization" had produced neither favorable nor unfavorable changes, and the authors feel that the operation does not improve the cerebral state in children with brain lesions.

Annals of Physical Medicine, London

1:1-36 (Jan.) 1952

Further Investigations into Effects of Micro-Waves. A. C. Boyle, H. F. Cook and D. L. Woolf.—p. 3.
*Ambulant Treatment of Complications Resulting from Varicose Veins and Allied Conditions. I. H. M. Curwen and B. O. Scott.—p. 17.

Treatment of Complications of Varicose Veins.—A total of 503 outpatients with chronic hypostatic edema, induration, and ulceration resulting from varicose veins and allied conditions were treated in a physical medicine department over a four year period. The majority of these patients had failed to respond to surgical and all other forms of treatment over periods as long as 30 years. The treatment was ambulant, and was designed to control venous stasis, edema, and induration to heal eczema and ulceration. The basic methods used were the wearing of elastic bandages to give support, with local deep friction massage to soften areas of fibrosis and active exercises to promote drainage. Patients were instructed in the technique of treatment, which was then largely carried out at home. Elastic stockings were used to maintain the limb in a healthy condition after healing. Of 427 patients under continuous observation, 366 have been discharged cured. In these the incidence of recurrence was 12.2%. The treatment is recommended as a pre and postoperative regimen and for cases in which surgery is inapplicable or has failed to give relief.

Boletin Cons. Gen. Col. Méd. España, Madrid

12:1-72 (Feb.) 1952. **Partial Index**

Indications and Technique for Surgical Treatment of Gastric Hemorrhage. A. de la Fuente Chaos.—p. 7.
Intracranial Epidermoids (Cholesteatoma). J. M. López-Porrúa and F. E. de Salamanca Jr.—p. 21.
*Khellin in Treatment of Syndromes of Coronary Insufficiency. L. Pescador and B. Martín de Prados.—p. 29.
Terramycin in Treatment of Malta Fever: Three Cases. J. L. Rodríguez-Miñón and J. M. Palacios Mateos.—p. 43.

Visammin in Coronary Insufficiency.—In the department of cardiology of Madrid University, 222 patients with clinical symptoms and electrocardiographic changes indicative of coronary insufficiency were treated with visammin (khellin). Most of the patients had coronary insufficiency. The remainder had coronary calcification, cardiac neurosis, anginal pain due to effort or myocardial infarction, either acute or of old duration. Visammin was given intramuscularly in daily doses of 100 to 300 mg. for one or two days, followed by daily doses orally of 150 to 300 mg. The daily doses were given in two or three divided doses at intervals of 8 to 12 hours. The scheme of treatment for preventing relapses and obtaining permanent cure consisted in maintaining the treatment for from six weeks to six months. In many cases, however, the results of only a day of treatment were so spectacular that the drug was given only at reappearance of pains, which became more and more infrequent or were completely controlled in the aforementioned period. The clinical symptoms disappeared and the electrocardiographic changes improved or disappeared in 71.27% of the total group, while the treatment failed in 3.72%. The 25 patients who received even small doses of papaverine (tetramethoxybenzylisoquinoline) simultaneously with visammin showed acute symptoms of intolerance to the drug, consisting of vomiting, acute vertigo, headache, general discomfort, diarrhea, and marked asthenia with drowsiness. The treatment was discontinued in all such cases. In cases of myocardial infarct visammin therapy was begun after control of acute pain by morphine. The authors conclude that visammin controls symptoms of coronary insufficiency and that papaverine is contraindicated during visammin therapy.

British Journal of Dermatology, London

64:87-128 (March) 1952

Connective-Tissue Naevi. J. R. Prakken.—p. 87.
Multiple Superficial Benign Basal-Cell Epithelioma of Skin: Report of Case with Zosteriform Arrangement of Lesions and Satisfactory Response to Treatment with Thorium X. V. H. Witten and M. P. Lazar. —p. 97.
Sun Heat and Artificial Heat in Relation to Skin Eruptions Due to Local Irritants. H. G. Adamson.—p. 104.
Drug Eruption from Paludrine (Proguanil) Hydrochloride: Report of Case. L. J. A. Loewenthal.—p. 106.

British Medical Journal, London

1:559-614 (March 15) 1952

Antirheumatic Effects of Hydrocortisone (Free Alcohol), Hydrocortisone Acetate, and Cortisone (Free Alcohol) as Compared with Cortisone Acetate. E. W. Boland.—p. 559.
*Proguanil-Resistance in Malayan Strains of Plasmodium Vivax. T. Wilson, D. S. Munro and D. R. Richard.—p. 564.
*Chemotherapy and Chemoprophylaxis of Malaria. Clinical Trials in 500 Cases and Mass Prophylaxis in Hyperendemic Area. R. N. Chaudhuri, N. K. Chakravarty and M. N. R. Chaudhuri.—p. 568.
Atypical Abdominal Tuberculosis with Haematological Manifestations. J. Friend and A. C. Thackray.—p. 574.
X-Ray Appearances in Asthma: Study of 200 Cases. H. Royle.—p. 577.
Treatment of Recent Transcervical Fractures of Femur. D. O. Williams and E. K. McLean.—p. 580.
Kahn Tube Test with Dropping-Pipettes. O. Khairat.—p. 582.

Proguanil Resistance in Malayan Strains of Plasmodium Vivax.—Experiments showed that in doses of 100 to 300 mg. once a week, proguanil, also known as "paludrine" or chloroguanide, effectively suppressed malaria. The British Army in Malaya substituted this drug for quinacrine in 1949. The investigation described here was started when fresh infections of falciparum and vivax malaria occurred late in 1950 among British troops in Malaya. Similar infections occurred in 1951 among troops from a different unit operating in the same areas. The troops were on an official suppressive dosage of 100 mg. of proguanil daily, and suppressive discipline was thought to be good. Treatment of some of the vivax infections revealed that the erythrocytic parasites in these patients were only temporarily suppressed by doses of 300 mg. of proguanil daily for 7 to 10 days. Parasitological and clinical relapses occurred 7 to 17 days after reversion to the normal suppressive dose of 100 mg. daily. One of these patients had been in Malaya only three months and had been on regular suppressive doses of proguanil from the day after arrival. Irregular dosage cannot be excluded as a possible cause of the incidence of malaria in these Army units, but it is thought that some infections may have developed in men who took their suppressive doses regularly. It is suggested that the proguanil-treated vivax patients may have been infected with a strain whose erythrocytic parasites were already partially resistant. If this happens, as seems possible, then controlled experiments are needed to determine whether resistance of erythrocytic forms also implies that pre-erythrocytic forms may complete their development and produce clinical attacks of malaria despite regular prophylactic dosage from the time of infection.

Chemotherapy and Chemoprophylaxis of Malaria.—During the past several years a number of new drugs have been tested at the Calcutta School of Tropical Medicine for their therapeutic and suppressive values in malaria. Patients admitted to the attached hospital were studied, but the main work on the suppressive therapy was carried out in a rural area about 40 miles from Calcutta. As in chemotherapy, so in chemoprophylaxis, chloroquine (base, 0.25 gm. weekly) and camoquin® (4-[7-chloro-4-quinolylamine]-alpha-diethylamino-ortho-creosol) (base, 0.2 gm. weekly) proved superior to proguanil also known as chlorguanide (salt, 0.3 gm. weekly or 0.1 gm. bi-weekly). They afforded high protection and reduced splenomegaly, thereby improving the general health of the population and increasing the working capacity. In spite of the fact that the people were living in poor economic conditions without any other antimalarial measures, there was a marked reduction in the incidence of malaria, which varied according to the drugs used. Until antimosquito measures are possible, chemoprophylaxis should continue to have an important place in the suppression of malarial fever.

Canadian Journal of Public Health, Toronto

43:1-42 (Jan.) 1952. **Partial Index**

Antibiotics in Public Health. C. D. Farquharson.—p. 1.
Cancer of Breast: Invalid Evidence of Increase. N. E. McKinnon.—p. 10.
*Infectious Hepatitis in Army Installations in Kingston Area. R. D. Barron.—p. 25.

Infectious Hepatitis.—The Kingston area was the only area in Canada that reported an unusual prevalence of infectious hepatitis in 1949 and 1950. A total of 260 patients with infectious hepatitis were admitted to the Kingston Military Hospital from April 1, 1949, to March 31, 1950. Observations of these cases suggested that infectious hepatitis may be spread by both the respiratory and the gastrointestinal route. The incidence of clinical jaundice in infectious hepatitis may be much lower than is usually anticipated. The incubation period of infectious hepatitis can be as short as 10 to 14 days. Infectious hepatitis may be spread by water, should the water treatment system break down in an endemic area. In the presence of much organic matter boiling of drinking water appears to be a more effective method of controlling spread of this disease by water than chlorination.

Deutsche medizinische Wochenschrift, Stuttgart

77:385-412 (March 28) 1952. **Partial Index**

*Closure of Draining Bronchus as Independent or Supplementary Treatment in Cavitary Tuberculosis. R. Nissen and A. Lezius.—p. 385.
Clinical Experiences with Injections of Fresh Hypophyses of Calves. D. Müting.—p. 390.
Clinical and Experimental Study of New Sulfonamide Compound: Sulfisoxazole (Gantrisin®). W. Mauermayer.—p. 391.

Closure of Draining Bronchus in Treatment of Cavitary Tuberculosis.—In 16 patients with cavitary tuberculosis, the bronchus draining the lesion was closed surgically. This was accomplished by ligation with heavy umbilical tape in 4 patients, and by sectioning of the draining bronchus followed by suture of the distal and peripheral stumps in 12. Thoracoplasty with resection of the first five ribs was performed in the four patients who had ligation of the bronchus, and the first three or four ribs were resected in four of the 12 patients whose bronchi were sectioned. Pulmonary parenchyma and blood vessels were not injured in the course of closure of the bronchus. Ligation of the draining bronchus resulted in removal of fistulous and open cavities despite the fact that these patients had had pyopneumothorax after perforation of cavities two years previously and their poor general condition did not permit pleuropneumonectomy with subsequent thoracoplasty. The ligation technique proved inadequate for closure of the main stem bronchus. Recanalization or recurrence of cavities, however, were not observed, although in three patients the ligatures became detached within three to five months and were expectorated. Of the 12 patients subjected to sectioning of the draining bronchus, six had multiple cavities in one or two segments, with tuberculous changes in the contralateral lungs. Closure of the cavities was obtained in all six patients by collapse of the cavity, atelectasis, or filling in with granulation tissue. Intracavitary secretory surfaces were not observed after closure of the draining bronchus. The remaining six patients had isolated cavities in the upper lobe without demonstrable tuberculous involvement of the contralateral side. In three of them Monaldi's drainage had failed, and a fistulous cavity had resulted in one. The sputum of four patients became free of bacilli immediately after the intervention, and the sputum of one within 18 days. Six to eight weeks after the operation the cavities were no longer visible on roentgenograms. Healing was more rapid and more complete than in the first group, although additional thoracoplasty was purposely not carried out in four patients. The favorable effect of closure of the draining bronchus independent of thoracoplasty was thus demonstrated. Operative exposure of the draining bronchus requires exact topographic diagnosis of the segment in which the cavity is situated. This may be established by tomography, bronchography, and bronchoscopy. Additional thoracoplasty may be advisable if pleural induration prevents filling of the empty space as a result of compensatory emphysema of the healthy pulmonary segments, or if there are tuberculous secondary foci, but the additional thoracoplasty can be definitely less extensive than when it is performed initially for collapse of the lung. In the absence of late results, it is still too early for formulating definite indications for operative closure of the draining bronchus, but it seems to be most suitable for the treatment of isolated cavities in the upper lobe, particularly for collapse-resistant cavities after pneumothorax, thoracoplasty or cavernostomy, for multiple cavities in tuberculous-indurated areas of the lung, and for fistulous cavities.

Giornale Italiano di Anestesiologia, Turin

18:1-146 (Jan.-Feb.) 1952. **Partial Index**

Peripheral Anesthesia in Abdominal Surgery. G. D'Errico.—p. 1.
*New Cardiovascular Test: Methamphetamine Test. S. Occhipinti and F. Aschieri.—p. 87.
Strong Parasympatholytic Drug in Anesthesia: Methantheline (Banthine®). M. Seveso.—p. 104.

Methamphetamine Test of Cardiovascular System.—The study of the blood pressure curves that follow administration of methamphetamine to patients at complete muscular and mental rest may serve as a preoperative prognostic guide. Generally, 15 to 20 minutes after the drug is given, a typical blood pressure curve shows an increase in the systolic and diastolic pressure that reaches its maximum level after 30 to 45 minutes and is maintained for as long as one and one-half or two hours. After this, the blood pressure either returns slowly to its original level, or, after a slight fall, reaches again the previous maximum level, maintains it for almost that same length of time, and then falls to its initial level. Simultaneously, the pulse rate decreases (16 to 22 beats less per minute) or remains unchanged. This typical blood pressure curve indicates good condition of the heart and the circulatory system, and the prognosis is good if severe shock does not occur during the operation. Deviations in this typical blood pressure curve indicate circulatory insufficiency. If, after injection of methamphetamine, both the systolic and diastolic pressure fall or remain unchanged and the pulse rate increases, there is insufficiency of the peripheral circulation. An increase in diastolic pressure alone indicates poor condition of the myocardium. These data were obtained by the authors, who gave 0.02 gm. of methamphetamine intramuscularly to 32 surgical patients. The blood pressure curve was typical in 22 of them. As a therapeutic agent, methamphetamine is indicated in preoperative cardiovascular hypotonia, in primary or neurogenic shock, and combined with transfusion in severe shock. It should be given cautiously to patients with myocardial lesions, hypertension, and hyperthyroidism.

Lancet, London

1:521-574 (March 15) 1952

Interpretation of Statistical Trends in Tuberculosis. V. H. Springett.—p. 521.
Treatment of Maternal Obesity. J. S. Richardson.—p. 525.
Eye Changes Following Exposure to Metallic Mercury. S. Locket and I. A. Nazroo.—p. 528.
Splenic Venography: Demonstration of Portal Circulation with Diodone. B. Dreyer and O. E. Budtz-Olsen.—p. 530.
Preservation of Arterial Grafts by Freezing. C. A. Hufnagel and H. H. G. Eastcott.—p. 531.
Congenital Anomalies of Aortic Arch. E. G. Dolton and H. E. Jones.—p. 537.
Pulmonary Haemosiderosis. R. E. W. Fisher and R. Makin.—p. 540.
*Local Use of Chloramphenicol in Wound Infections. M. H. Flint, H. Gillies and D. A. C. Reid.—p. 541.
Plasma-Cystine Levels in Cystinuria. D. I. Fowler, H. Harris and F. L. Warren.—p. 544.

Local Use of Chloramphenicol in Wound Infection.—Flint and associates say that it is now unusual to find a strain of Staphylococcus aureus that is susceptible to either penicillin or streptomycin. These resistant organisms do respond to the local application of chloramphenicol, however, as do Pseudomonas pyocyanea, Streptococcus haemolyticus, Proteus vulgaris, and coliform bacilli. The authors treated 30 consecutive wound infections, including infected burns, gravitational ulcers, pedicle flaps, grafts, and abscess cavities, with chloramphenicol locally. Owing to the varied nature of the lesions, both dry and moist applications were used. In many of the cases a powder of 5% chloramphenicol in lactose was used, but where a moist application was more suitable, a solution of 5% chloramphenicol in propylene glycol was used. This solution was either used to irrigate the cavities or applied on wicks or gauze packs. The organisms in all but one of the cases were sensitive to 2.5% chloramphenicol. No organism became more resistant during or after treatment. Disappearance of bacteria in 30 cases was obtained in an average of four or five days; in many cases the time was shorter, especially in patients treated with chloramphenicol in propylene glycol, which seemed more effective than a powder. No infection failed to respond either clinically or bacteriologically to this local therapy, although 28 out of 30 patients had failed to respond appreciably to local treatment and/or systemic chemotherapy. After local application of chloramphenicol, many responded dramatically and all showed improved wound healing. No local or generalized allergic phenomena or deficiency of vitamin B complex developed. Local chloramphenicol in penicillin-insensitive wound infection is a useful adjunct to surgery.

Lyon Chirurgical

47:129-256 (Feb.-March) 1952. **Partial Index**

Nontraumatic Arterial Aneurysms of the Extremities. P. Wertheimer, J. Sautot and J. Chevalier.—p. 129.
Treatment of Hydatid Cysts of Kidney. L. Sabadini and J. Ducassou.—p. 139.
*Vagotomy in Treatment of Duodenal Ulcer. F. Lagrot and J. Greco.—p. 187.

Vagotomy for Duodenal Ulcer.—Vagotomy was performed in 111 patients with duodenal ulcer and 8 with postoperative peptic ulcer that occurred after gastroenterostomy in 5 and after gastrectomy in 3. Of the 119 patients, 37 were subjected to bilateral vagotomy alone, 48 to vagotomy combined with posterior gastroenterostomy, 15 to vagotomy plus Finney's pyloroplasty, and 19 to vagotomy plus partial gastrectomy. Of the total group, 12 died, 13 were lost to observation, 87 were followed for four months to three years, and 7 were followed for less than four months. Ten of the 12 deaths occurred in patients operated on for duodenal ulcer and 2 in patients operated on for postoperative peptic ulcer; only 3 deaths were attributable to the vagotomy. The immediate postoperative course was stormier among the patients subjected to vagotomy alone than in those in whom vagotomy was combined with partial gastrectomy. Ulcer pain disappeared immediately, but there was subumbilical swelling, diarrhea, and occasional vomiting, manifestations of the gastroduodenal stasis that had been induced by sectioning of the vagus nerve. Gastroenterostomy or pyloroplasty combined with vagotomy reduced the postoperative disturbances. Study of gastric acidity after insulin injection in 48 patients with duodenal ulcer, before and after vagotomy, corroborated the clinical observations. The gastric acidity was reduced less by simple bilateral vagotomy than by vagotomy combined with gastroenterostomy or pyloroplasty. Partial gastrectomy combined with vagotomy caused pronounced anacidity. Roentgenograms taken of 73 patients after vagotomy demonstrated disappearance of the ulcer niche, dilatation of the duodenum with stasis, and gastric atony, with the characteristic picture of dilatation of the stomach and delayed passage of barium. The follow-up of 87 patients showed that while only moderate results were obtained with simple bilateral vagotomy, which therefore should be abandoned in the future, results obtained with vagotomy combined with posterior gastroenterostomy or pyloroplasty were satisfactory in 85.10%, fair in 12.76%, and poor in 2.14% of the patients. Highly satisfactory results were obtained with vagotomy combined with partial gastrectomy. The authors conclude that vagotomy combined with gastroenterostomy or pyloroplasty yields results comparable to those obtained with gastrectomy, which is still valuable. Surgical treatment of duodenal ulcer should be determined by the physiological knowledge obtained from the tests of gastric secretion (histamine and insulin tests). Surgical treatment should consist of resection of the antropyloric region (for hyperacidity of hormonal origin) or of vagotomy combined with posterior gastroenterostomy or pyloroplasty (for hyperacidity due to the vagus nerve).

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

96:425-484 (Feb. 23) 1952. **Partial Index**

Favorable Results of Active Immunization Against Whooping Cough in a Rural Practice. M. B. M. Veenland and H. R. van der Molen.—p. 431.
Permanent Suction Drainage of Gastrointestinal Tract with Description of Semiautomatic Negative Pressure Apparatus. J. Leutscher.—p. 437.
*Intra-Arterial Transfusion. W. Steensma.—p. 446.

Intra-Arterial Transfusion.—Reports in the literature, particularly in American surgical publications, suggest that in certain conditions blood transfusions given through an artery are more effective than those given by the venous route. Steensma de-

scribes several cases in which he was able to corroborate this. Persons who are in deep shock are especially likely to derive more benefit from an intra-arterial than from an intravenous injection. Describing the apparatus which he used for intra-arterial transfusion, he stresses the need of a pressure pump.

Nordisk Medicin, Stockholm

47:201-230 (Feb. 15) 1952. **Partial Index**

*Antibiotic Treatment of Staphylococcic Bacteremia. P. Bastrup-Madsen and G. Nørby.—p. 201.
Controlled Hypotension to Reduce Bleeding in Operative Field. J. Stovner and S. Lindell.—p. 206.
Cancer Recurrence After Prostatectomy. G. Bakalim.—p. 209.
*Abdominal Aortography, Especially in Renal Diseases. R. Weyde.—p. 212.
Penicillin Treatment in Pemphigus Vulgaris. S. Hammarskjöld.—p. 221.

Use of Antibiotics in Staphylococcic Bacteremia.—The introduction of antibiotics has improved the prognosis in staphylococcic bacteremia. It is important to establish the bacteriological diagnosis before the start of treatment and to determine the resistance of the bacteria. Most strains of Staphylococcus aureus in Denmark respond to the antibiotics used, sensitivity to penicillin being most marked. The sensitivity of different strains to the various antibiotics may vary, and in rare cases there are strains resistant to penicillin. Sulfonamides seem to be ineffective. Eight cases of staphylococcic bacteremia are described. One patient given sulfonamide died. Of the seven patients treated with antibiotics, six recovered fairly rapidly and without complications; one patient died of ulcerative endocarditis. Massive doses of the antibiotic should be given in order that a sufficiently high concentration of the antibiotic be reached in the septic foci; 1,000,000 units of penicillin daily is advised for adults. In most cases the temperature did not become normal until about 10 days after the start of treatment. The authors urge continuation of antibiotic treatment for at least 10 additional days after the temperature level is normal. If the temperature remains high a long time, the possibility of a focus that requires surgical treatment should be considered, but surprisingly large septic foci disappear with antibiotic treatment.

Abdominal Aortography, Especially in Renal Diseases.—Weyde reports on 210 aortographic examinations performed in 200 patients, 155 of whom had renal disorders. One hundred of the examinations were carried out in the past year, a period during which 1,675 intravenous urograms were obtained. This indicates the frequency with which urographic examination is supplemented by aortography. The special field of aortography called renal angiography provides an important supplement to urography and pyelography in diagnosis of renal cysts and tumors, the establishment of atrophy of the renal parenchyma in hydronephrosis, and determination of the extent of destruction in specific and nonspecific disorders in the renal parenchyma. According to the author, abdominal aortography entails little danger, and is so simple that it can be used routinely, increasing diagnostic possibilities.

Revista Médica de Chile, Santiago

80:1-78 (Jan.) 1952. **Partial Index**

*Hemophilia and Hemophilic Syndromes. R. Honorato C.—p. 1.
Hemoglobin in Hematological and Hepatobiliary Affections. H. Ducci and A. Spoerer.—p. 11.
*Silicosis: Review of 717 Cases. J. Ansola, V. Labbe, V. García and others.—p. 21.
Cortisone and Experimental Chagas' Disease. M. Agosin, R. Christen, A. Jarpa and others.—p. 34.

Hemophilia and Hemophilic Syndromes.—Disturbances in coagulation do not fully explain the picture in hemophilia. The frequency and seriousness of the hemophilic symptoms do not depend on the clotting time; patients in whom the clotting time was as much as two hours have been known to bleed less than others in whom it was only 14 minutes. Experiments have shown that two factors at least are involved in hemophilia; one, which is thromboplastinogenic, can be modified by treatment designed to stimulate the liver. Prothrombin consumption during coagulation, which is low in the hemophilic patient, tends to become normal under the influence of digitalis lanata, dehydrocholic acid, and methyl xanthines, although the clotting time is not changed. The sulfonamides, which do not affect prothrombin consumption during coagulation, often aggravate the symptoms of hemophilia by prolonging the clotting time. Normal blood calcium concentration is postulated to be an anticoagulant factor; a reduction in calcium concentration improves clotting in normal as well as hemophilic persons. The author lists four types of hemophilia: typical, acquired, latent, and dissociated. The patients treated with digitalis, dehydrocholic acid, and methyl xanthines were greatly benefited; hemorrhagic accidents decreased in number and severity, and hospitalizations were less frequent.

Silicosis.—Analysis of 717 cases of silicosis in Chile showed that most of them occurred among workers in the copper mines and in the quartz and glass industries. Objective symptoms are chiefly due to the two most frequent complications: pulmonary emphysema and chronic bronchitis. Pulmonary tuberculosis is the most serious complication; it occurred in an active form in 88, or 12.2%, of the cases, and was inactive in 29 others (4%). Chronic cor pulmonale was found in 22 cases (3%). The authors state that chronic silicosis sometimes progresses even after the hazardous employment has been discontinued; in 11.2% of 89 patients no longer exposed to dust, silicosis progressed without complications and in 7.8% tubercular complications developed. Silicosis is recognized as an occupational disease in Chile, and Chilean laws provide compensation for affected workers.

Revista Paulista de Medicina, São Paulo

40:1-78 (Jan.) 1952. **Partial Index**

*Metastasis of Hypernephroma to Thyroid Gland. Review of Literature and Presentation of New Case. N. Moraes Barros Filho and A. Dino de Almeida.—p. 1.
Inguinal Hernia in Children. V. Alves de Carvalho Pinto.—p. 19.
*Accidental Transmission of Chagas' Disease to Man by Blood Transfusion. J. L. Pedreira de Freitas, A. Biancalana and others.—p. 36.

Metastasis of Hypernephroma to Thyroid Gland.—Metastatic lesions of the thyroid are seldom recognized; when they are, tumor dissemination has usually progressed to such an extent that treatment can only be palliative. The authors present a case in which an unsuspected and nonsymptomatic hypernephroma of the right kidney, found at autopsy, produced a metastatic lesion superimposed on a small nodular goiter of long duration. This goiter began to increase rapidly in size three months before the patient was hospitalized, invading adjacent structures and causing progressive compression of the trachea and the esophagus. Primary thyroid malignancy was diagnosed, and a palliative operation decided upon. The tumor and adjacent structures were removed. The right carotid artery had to be dissected in its entire length; its walls were weakened and thinned by neoplastic invasion. Postoperative course was uneventful for four days, with complete relief of symptoms, but on the fifth day a sudden hemorrhage occurred, caused by rupture of the carotid artery, and this led to the patient's death within a few seconds. A review of the literature showed only 23 other cases of thyroid metastases originating in a hypernephroma.

Transmission of Chagas' Disease Through Blood Transfusion.—The possibility of infection with Chagas' disease through blood transfusion has lately been proved by serological and parasitological tests; research is now under way to determine the incidence of T. cruzi infection among donors to blood banks in São Paulo. Recipients who may have received blood from infected persons are being examined, and in vitro investigations are being carried out aimed at demonstrating the parasites in blood intended for transfusion and discovering methods of destroying them without making the blood unusable. Transmission of the parasites to one patient who had received blood from a donor with a chronic infection was proved by a positive xenodiagnosis, and in another by the complement fixation test and direct demonstration of T. cruzi in the blood. Incidence of the infection among prospective donors to two blood banks in São Paulo, where Chagas' disease is not autochthonous, was 2.2%. Complement fixation tests should be used to exclude infected persons as blood donors. Thimerosal (merthiolate®) is apparently effective against T. cruzi in solutions of 1:1,000, but further study is needed to establish this fact.

BOOK REVIEWS

The Glaucomas. By H. Saul Sugar, M.D., F.A.C.S., Director of Glaucoma Clinic, Receiving Hospital, Detroit. Cloth. $12. Pp. 469, with 123 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1951.

The author is well known to ophthalmologists for his original contributions and studies on glaucoma over many years. In this well-printed and well-illustrated work he has gathered, in lucid form the results of his own labor and that of others. As a result, he offers a useful book with excellent references embracing the voluminous literature on the most common and devastating ocular disease affecting man.

After an interesting chapter on the history of glaucoma concepts, he discusses the anatomy of the eye in relation to the disease, the production, drainage, and circulation of the aqueous humor, the physiological mechanisms involved in intraocular pressure, tonometry, classification of the glaucomas, etiology and pathology of the various forms, therapy, methods of examination, including gonioscopy and perimetry, and a discussion of the various operations that are employed in the surgical treatment of the different forms.

The subject is difficult and to cover it exhaustively would require several volumes. New knowledge is slowly accumulating, particularly regarding the pathogenesis of the disease, but the accretion is so slow that this book will not be out of date for a long time. In a work of this kind much has to be omitted, and the author has wisely emphasized the facts with which he is most familiar. For this reason, the chapters on the classification of the glaucomas, gonioscopy, and surgery are particularly noteworthy.

Modern Trends in Physiology and Biochemistry: Woods Hole Lectures Dedicated to the Memory of Leonor Michaelis. Edited by E. S. Guzman Barron. Cloth. $8.50. Pp. 538, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1952.

This is an impressive monument to Michaelis, a pioneer in the application of physicochemical methods to the study of cellular phenomena, and it is made up of contributions to the field in which he wielded a most inspiring influence. The chapters are the work of various distinguished authors. Five deal with the physiology and finer morphology of the cell, three with the properties of muscle, five with the structure and activity of nerve fibers, five with the relation of enzymes to metabolism, one with the mechanisms of drug action, and one with biochemical evolution.

The subject matter is intricate, but the presentation is clear. Although the problems discussed have no immediate application to the practice of medicine, they are of fundamental importance to its future development. In addition to subject and author indexes, there is a wealth of illustrations and references. This book will be appreciated most by those doing research in the basic medical sciences.

Panton & Marrack's Clinical Pathology. By H. B. May, M.A., M.D., M.R.C.P., Director, Clinical Laboratories, London Hospital, London, and J. R. Marrack, M.A., M.D., Professor of Chemical Pathology, University of London. Sixth edition. Cloth. 30s. Pp. 512, with 44 illustrations. J. & A. Churchill, Ltd., 104 Gloucester Place, Portman Sq., London W.1., 1951.

Despite the death of the senior author of the previous edition, Sir Philip Panton, the general tenor of the book is well maintained. It provides the junior pathologist and the advanced laboratory technician with authoritative information about clinical laboratory methods and gives supplemental information on their clinical significance and applications. The great success of this book testifies to the excellent organization of the material that is maintained in this edition. In this thoroughly revised edition techniques are separated from the theoretical aspects, and the greatest problem of a book of this type, the selection of the material, has been masterfully solved. In general, emphasis is more on technique than on application or theory, and it is in the latter that one may more readily find points of argument. The methods described have been well tried in London Hospital.

The book is now divided into three main sections: hematology, chemical pathology, and bacteriology and immunity as well as into shorter chapters on fungi and parasites, sputum and puncture fluids, the investigation of certain common clinical states, pregnancy and fertility tests, and histological methods. The relatively few illustrations are well reproduced, and literature references are omitted. As a whole, the synopsis-like summary discusses the methods, as used in England, in an excellent fashion. The American reader may find it of value to acquaint himself with methods of general use, especially those accepted in England. He may find himself, however, occasionally at variance with some of the statements about their significance.

A Textbook of Clinical Pathology. Edited by Seward E. Miller, M.D., Medical Director, United States Public Health Service, Washington, D. C. [Formerly edited by Roy R. Kracke and Francis P. Parker.] Fourth edition. Cloth. $9. Pp. 1060, with illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1952.

This edition of this textbook has a new editor and also three new contributors. The editor's name does not appear on the roster of members of the American Society of Clinical Pathology or in the available lists of members of other national societies of pathology. The contributors are all members of active laboratories.

In this edition, the book has been redesigned, with three chapters added and some chapters rewritten. The format and type are excellent, and, in general, the illustrations and plates are satisfactory. The book includes most of the routine tests that are or have been used in clinical pathology. The quality of the subject material varies from excellent, such as the chapter on blood groups, to mediocre, such as the one on liver function tests. To a modest degree, the volume accomplishes the objective stated in the foreword, "to give the medical student, intern, resident, physician, clinical pathologist, and teacher of clinical medicine one authentic source of basic scientific information."

Refraction Correlated with Optics and Physiological Optics and Motility Limited to Heterophoria. By Walter B. Lancaster, A.B., M.D., D.Sc.Hon. Cloth. $7.75. Pp. 310, with 99 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1952.

The aim of this book is to improve the work of the average ophthalmologist in the major fields of refraction and motility by supplementing standard works in the field. According to the author, many ophthalmologists who have an excellent understanding of fundamental optical principles and formulas are unable to do good refractions, for they have never been taught the refinements of subjective methods. Nor are they too well acquainted with the measurement and treatment of motility. The author's observations and comments on these topics are refreshingly colloquial. The average reader will gain a practical grasp of phases of optics that are useful in clinical practice. From this point of view alone, the book is worth his closest attention.

Good Food Without Salt. By Margaret Vaughn. Introduction by Mary Catherine Tyson, M.D. Foreword by Solomon Silver, M.D. Cloth. $3. Pp. 188. Thomas Y. Crowell Company, 432 Fourth Ave., New York 16, 1951.

The author has prepared a series of recipes and useful hints for increasing the palatability of foods used in a low-sodium diet. The merits of the diets suggested are not discussed, nor are the conditions indicated under which they may be used. More precise information than is actually available concerning

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The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

the sodium content of foods seems to have been assumed by the author. The sodium content of most foods and the variation of sodium content in particular foods are not known precisely. The sodium content of fresh as well as canned foods may be assumed to vary appreciably. The author gives the sodium content of recipes and servings in milligrams carried to the third decimal place, but this is fallacious, because sodium analyses have been known to vary as much as 100%. If the data on sodium per serving is not taken too literally this book should be helpful to persons preparing low-sodium diets.

The book has an appendix giving information on the uses of spices and herbs. A list of places where special purpose foods may be obtained is included, but it should be mentioned that many of the special purpose foods useful in the preparation of low-sodium diets can also be obtained from grocery stores. The Council on Foods and Nutrition accepts a considerable number of the preparations mentioned for use by patients on such diets.

Moderne Therapie in innerer Medizin und Allgemeinpraxis: Ein Handbuch der medikamentösen physikalischen und diätetischen Behandlungsweisen der letzten Jahre. Von Dr. Rudolf Franck. Fourteenth edition. Cloth. 27 marks. Pp. 584. Springer-Verlag, Reichpietschufer 20, Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg; Göttingen, 1951.

The fact that this manual is in its 14th edition since 1931 is evidence of its popularity. It is divided into two parts: (1) therapy of internal diseases and (2) a discussion of pharmaceutical preparations. In the first part, the treatment of different types of diseases is discussed, with the diseases classified either according to their nature, such as infectious diseases, disease of the blood, and hemorrhagic diatheses, or according to the system involved, such as the respiratory or circulatory system. In the section on infectious diseases prophylactic measures also are discussed. In these discussions on treatment the author considers not only medication but such important matters as the patient's surroundings, bed rest requirements, ventilation, whether isolation is necessary, diet and physical therapy of various kinds. The descriptions of medication and other therapeutic procedures, such as diet, are detailed and precise. At the end of part 1 is a list of medicaments, alphabetically arranged according to their functions, i. e., antiarthritic, antineuralgic, and others. This list contains, in addition to pharmacopoeial preparations, proprietary remedies under their trade names, many of which are quite different from American trade names.

In part 2, the remedies described are arranged alphabetically, regardless of function. The correct chemical name of each drug is given, along with the forms and doses of its various preparations, the indications for its use, and the name of the manufacturer in the case of proprietary preparations. Some obsolete preparations are listed but are plainly marked as outdated. Following this classified list of remedies are a list of medicinal springs, including mineral water salts, with indications for their use, a list of preparations of the German Apothecaries Guild, a table of maximal doses of medications for adults, a section discussing various kinds of baths and their uses, a section on the uses of tuberculin and various serums, a section on poisons and their antidotes, and an index.

The book is clearly written, with small but distinct type, and contains a mass of useful information. It's one drawback is the use of German proprietary names; although these are followed by the chemical names, many are unfamiliar to the average American practitioner.

Mind: A Social Phenomenon, Illustrated by the Growth of Medical Knowledge. By F. S. A. Doran, M.A., M.D., F.R.C.S., Clinical Demonstrator in Anatomy, University of Manchester, Manchester, England. Cloth. 10s.6d. Pp. 182. Watts & Co., Nos. 5 & 6 Johnson's Court, Fleet Street, London, E.C.4, 1952.

The author points out that there are two distinct groups of opinion about the "nature" of the human mind. One viewpoint holds that it is of a nonmaterial, spiritual, or even semidivine and mystical character, akin to the "soul," which inhabits the human material body without actually becoming part of it. The other viewpoint is that the "mind" is composed of the same kind of "stuff" that makes up the physical universe, that it is "material" in character, and that it is probably connected with the function of the brain and the central nervous system. The former opinion is the most widespread and may be regarded as orthodox; the latter is less popular and tinged with heresy.

The newer findings in human physiology and medicine, together with changing conceptions of man and the universe, furnish the author with data to support the assumption that the mind is an expression of brain function and that its contents are largely determined by tradition and by the fears, aspirations, hopes, beliefs, prejudices, and values of those with whom we come in contact. This book provides rewarding, albeit slow, reading.

A Handbook of Surgery. By Reginald C. B. Ledlie, M.B., B.S., F.R.C.S., Surgeon, Royal Cancer Hospital, London, and Michael Harmer, M.A., M.B., B.Chir., Assistant Surgeon, Royal Cancer Hospital. Cloth. $5. Pp. 535, with 56 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall & Cox, 7-8 Henrietta St., Covent Garden, London, W.C.2, 1951.

In this handbook the author discusses surgery in general, with particular emphasis on the advances made in the past decade. Surgical pathology, diagnosis, and treatment as well as the essential details of recent advances have been well summarized. Unfortunately, in the section dealing with water-salt balance, no space was devoted to the recently recognized important role of potassium. The presentation of various clinical phases in the form of a schema is well done, particularly in figure 2, page 107, which deals with generalized osteitis fibrosa due to parathyroid tumor. Chapters 14, 15, and 16, covering fractures, dislocations, and amputations, injuries of the upper limb, and injuries of the lower limb, respectively, are particularly good. Pharyngeal diverticulum is adequately discussed; however, no mention is made of those diverticula of the esophagus that occur in its midportion and immediately above the diaphragm. These should have been included. Many will take issue with the advice given, on page 381, to give morphine for relief of pain and spasm of the ampulla of Vater. With the exception of this debatable point, the section dealing with the biliary apparatus is one of the best in the book. The last sections deal with genitourinary problems, and these, too, are nicely presented. Although the scope of the book is great, its size is convenient, and it can be utilized for a grasp of essentials and easy reference.

Plastic Surgery: An Introduction for Nurses. By C. R. McLaughlin, M.B., Ch.B., B.Chir., Consultant in Plastic Surgery, Queen Victoria Hospital, East Grinstead. With special sections by other members of Queen Victoria Hospital staff. Foreword by Sir Archibald H. McIndoe, C.B.E., M.S., M.Sc. Cloth. $3. Pp. 125, with 32 illustrations by R. H. Dale, M.A., M.B., B.Chir. J. B. Lippincott Company, 227-231 S Sixth St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1951.

This small text should be a welcome reference book for all operating room nurses in hospitals in which an appreciable amount of plastic surgery is done. A brief description of the overall management of all types of general plastic surgery problems is discussed, including burns, facial bone fractures, orbit injuries, oral surgery, and reconstruction of extremity defects. A good, brief, simplified description of the different types of skin grafts and skin flaps is included. The general procedure and instruments needed in the operating room for all kinds of routine plastic surgery operations are discussed. Postoperative care and anesthesia are discussed simply but adequately The glossary of common terms, instruments, and procedures would be a boon to any surgical nurse. This is an authoritative text that should be in every hospital library.

The Present Status of Antibiotic Therapy with Particular Reference to Chloramphenicol, Aureomycin, and Terramycin. By Francis G. Blake, M.D. Augustus B. Wadsworth lecture, May 16, 1951. Publication number 137, American Lecture Series, monograph in American Lectures in Tests and Techniques, edited by Gilbert Dalldorf, M.D., Director of Division of Laboratories and Research, New York State Department of Health, Albany. Paper. 90 cents. Pp. 26. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1952.

This monograph presents an impartial appraisal of the clinical effectiveness of the three broad spectrum antibiotics, chloramphenicol, aureomycin, and terramycin, based on information available in May, 1951. A short bibliography completes the text.

QUERIES AND MINOR NOTES

IRON-STAINED TEETH

To the Editor:—*1. What are the effects of iron stain on the teeth, especially in young children? To what extent does it promote dental decay? 2. What are the relative merits of sulfate, gluconate, citrate, and other salts of iron? 3. How can iron best be given to young children?*

W. F. Tanner, M.D., Young Harris, Ga.

Answer.—1. Iron stain, which is easily removed by routine dental prophylaxis, is a surface deposit and on the teeth of children has no deleterious effect other than giving them an unattractive appearance. As far as is known, iron stain does not promote or affect dental decay in any way.

2. Ferrous sulfate gives the most absorbable iron per weight of any iron salt, although gluconate or citrate may be less irritating.

3. Iron is best given orally as an elixir of ferrous sulfate or in solution flavored with citrate. Such iron medications should be given after meals and not with milk because of the precipitation of iron by the phosphates. It must be remembered that iron preparations are some of the most frequently prescribed drugs in the medical armamentarium. Recent communications reveal that acute iron poisoning is a reality and iron is not a completely innocuous drug when given in overdosage.

Reference is made to "Ferrous Sulfate Poisoning: Report of 3 Cases" by T. L. Duffy and A. M. Diehl (*J. Pediat.* **40**:1 [Jan.] 1952).

HEAD ROLLING IN CHILDREN

To the Editor:—*Is there any treatment to stop the nightly head rolling of a child, aged 7? This condition has been apparent almost since birth. She is a fraternal twin, in otherwise perfect physical and mental condition, and has never had rickets or any other serious illness, just the usual childhood diseases.*

M.D. Virginia.

Answer.—If the nightly head rolling of this 7-year-old child occurs while she is asleep it could be designated as a sleep disturbance, in the same category as nightmares, night-terrors, talking in the sleep, and grinding of the teeth while asleep. If it occurs before sleep it is a habit or conditioned reflex, which must be handled as any other similar condition. A mental hygienist might be consulted concerning this habit. No specific treatment seems indicated.

TREATMENT OF BURSITIS

To the Editor:—*What is the present status of deep roentgen therapy for the treatment of acute or chronic subacromial bursitis? Are there any contraindications? How many times can a person be given this type of therapy safely? How does it compare with other forms of therapy?*

George E. Quinn, M.D., Farmington, N. H.

Answer.—Acute and chronic subacromial bursitis are two entirely different problems from the standpoint of therapy. The patient with typical acute subacromial or subdeltoid bursitis has severe pain that prevents use of the extremity and disturbs rest. It is the consensus of orthopedic opinion that deep roentgen therapy for this condition is of definite and sometimes dramatic value. Roentgen therapy is usually given in three or four divided doses of 150 to 200 r units each, with the treatments given on successive days. When roentgen therapy is used alone, adequate sedation, rest of the extremity, and the use of ice bags are advised. For the patient in acute distress, it is often advisable to aspirate the distended bursa with multiple punctures, using a large gage needle, with procaine (novocain®) hydrochloride as a local anesthetic. Needling can be followed by roentgen therapy.

Patients with chronic subacromial or subdeltoid bursitis usually do not respond to roentgen therapy, as fibrosis or even calcification has occurred. Roentgen therapy, combined with intensive physical therapy, sedation, and sometimes, repeated procaine hydrochloride injections and needling, may be used for this type of patient. Recovery is usually slow. It is not considered advisable to give a patient more than two courses of roentgen therapy for subdeltoid or subacromial bursitis. If improvement is not obtained in a reasonable period of time, surgical excision of the bursa and exploration of the musculotendinous cuff is recommended.

CARE OF MICROCEPHALIC CHILD

To the Editor:—*A serviceman has a 16-month-old microcephalic daughter. The baby's condition is such that she requires almost constant attention. Please advise if there are institutions, either state or private, specializing in this type of patient and state your recommendations as to the best solution for this airman, since his finances are limited.*

Robert E. Lee, M.D., Gulfport, Miss.

Answer.—Microcephaly indicates an abnormally small brain within a skull of diminished size caused by failure in development. True microcephaly must be differentiated from the false variety, in which the diminished size of the brain is caused by a primary defect or a secondary cause. An example of the latter is radiogenic microcephaly caused by radiation of the maternal pelvis prior to the fifth month of gestation, when the immature nervous system is susceptible to the effects of roentgen rays. The fontanelles and sutures close prematurely because of the failure of continued normal growth of the brain. Various degrees of mental deficiency are always present, ranging from high-grade feeble-mindedness to severe amentia. Nothing can be done to improve the mental capacity of these persons; thus, institutionalization is indicated for life. Every state has facilities for these unfortunates. Inquiries should be directed to the state hospital nearest the patient. In this case, write to the Mississippi State Hospital, Whitfield, Miss., where the charge would be minimal. Private institutions, of which there are many, probably would be too expensive for this serviceman.

NIGHT CRAMPS IN LEGS

To the Editor:—*A woman, aged 69, who is otherwise in good health, has, at intervals, painful spasms of the calf muscles or of the muscles in the area above the Achilles tendon. These are associated objectively with a hardening of the muscles in the painful area. Massage or hot baths seem to hasten the termination of spasms. Attacks usually occur when she is asleep and wake her. She is on a normal diet, supplemented by B complex vitamins.*

M.D., New York.

Answer.—Painful spasms in the calf muscles occurring during the night in a 69-year-old woman are characteristic of so-called night cramps. The cause of these is not well understood, but they seldom indicate poor arterial circulation or phlebitis. They often respond to quinine sulfate therapy; the recommended dose is 0.32 to 0.65 gm. (5 to 10 grains) taken two or three hours before retiring. Diphenhydramine (benadryl®) hydrochloride may be used in place of quinine sulfate, in a dose of 50 mg. taken an hour or two before retiring.

CALCIFICATION IN AORTIC ARCH

To the Editor:—*Please give an opinion as to whether roentgenographically visible calcification in the aortic arch, with or without aneurysm, is due to vascular syphilis, arteriosclerosis, or both and to what degree.*

C. D. J. Generales, M.D., New York.

Answer.—Calcifications in the aortic arch are usually due to arteriosclerosis and very rarely to syphilis.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.